The *WW2 Foggia Airfield Complex*

by
Mike Seager Thomas

in the *Bradford Archive* of *Aerial Reconnaissance Photographs*

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Cover photographs: Améndola on the 30th of April 1945 (Bradford Archive); Foggia complex airfield (Hatlem & Hunter 2005: 210); San Severo-San Giusta (USGS)
Back cover photographs: Tortorella today; unknown (*photos: MST & unknown*)

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by Mike Seager Thomas

As part of the UCL Institute of Archaeology Tavoliere-Gargano Prehistory Project, I was tasked between 2003 and 2013 with analysing *c*. 600 WW2 aerial photographs (APs) selected by archaeologist and former British Army Intelligence Corps photo interpretation officer, John Bradford, for use by him in a monograph on the archaeology of the Tavoliere Plain, in southeast Italy (Bradford 1957: 86; Seager Thomas 2020a in press). These photographs, taken by the photo reconnaissance squadrons of the *Northwest African Photographic Reconnaissance Wing* (NAPRW) and the *Mediterranean Allied Photo Reconnaissance Wing* (MAPRW), include operational reconnaissance photographs taken in the period leading up to and during the allied invasion of Italy in September 1943, and later training photographs (1944 and 1945). They were of interest to Bradford and are of interest to archaeologists today because they show many cropmarks of, particularly Neolithic (e.g. Figure 65), but also Iron Age and Roman sites, and many now ploughed-out or built over traces of the region's medieval and early post-medieval landscape (Figures 30–31); and it is because of these that they were selected out and have survived. But their original purpose was military and they remain a primary and—in some cases—unique source for the recent military history of the region, particularly that of the so-called "Foggia airfield complex", upon which much WW2 photo reconnaissance in the region was focused (Dengler 2009: 129–31). It is their role as a source for the military history of the region—and particularly these airfields—with which the present essay is concerned.

The manner of its formation, firstly, for military purposes and then for archaeology, has skewed the Bradford Archive both historically and archaeologically. Around a $^{1}/_{3}$ of the photographs in it show airfields, and many others, the environs of these. Conversely, those few airfields which are not represented, are those around which, in 1943–45, no archaeology was visible (Seager Thomas 2020a: fig. 2). Nonetheless, for both fields of study, their research potential is huge.

The use of these photographs in the study of the military history of the region is threefold. First of all, they assist us—in combination with other evidence—to establish which sites were airfields during WW2, when, and the form *or forms* they took. Useful work on this topic has already been carried out, not

least by "RonaldV" for his *Forgotten Airfields* website (2010–20), but many uncertainties have remained unresolved. Different current lists, for example, show airfields that never existed (e.g. Cerignola) or located off the Plain (e.g. Palata), omit airfields for which there is clear evidence (e.g. Foggia #5, Sant' Andrea), give misleading names for individual airfields (Posta Augello for the correct Posta Uccello) or list the same airfield under several different names (e.g. Palmori, Schifara and Sàlsola), etc. (e.g. deZeng 2015: 81; Maurer 1982; RonaldV 2020; Wikipedia 2020a). Using the Bradford Archive photographs, many of these uncertainties can be (and are here) resolved. They also—importantly—provide a context of understanding, which enables us to resolve issues that the photographs by themselves cannot. Secondly, for a handful of airfields, individual photographs provide details of airfield construction and dismantling, which histories of the period largely overlook (e.g. Fagg 1983: 261). These issues too are considered here. Finally, they perform the role that they did for the WW2 photo interpretation officer, showing on the one hand, which photo reconnaissance squadrons were operating where and when, and on the other, what was happening on the ground beneath them at the time: how far from the "runway" were aircraft dispersed that day, did those bombs really hit the target, and, when the coverage was low enough, what aircraft or formations were there? These are touched upon here, as part of the airfields' wider context, but detailed study of them is reserved for a later essay.

The use of the Bradford Archive in archaeology can be seen in Bradford & Williams-Hunt (1946), Bradford (1949; 1950; 1957), Jones (1987), Hamilton *et al*. (2006), Hamilton & Whitehouse (2020), Radcliffe (2006) and Seager Thomas (2020).

Sources and methods

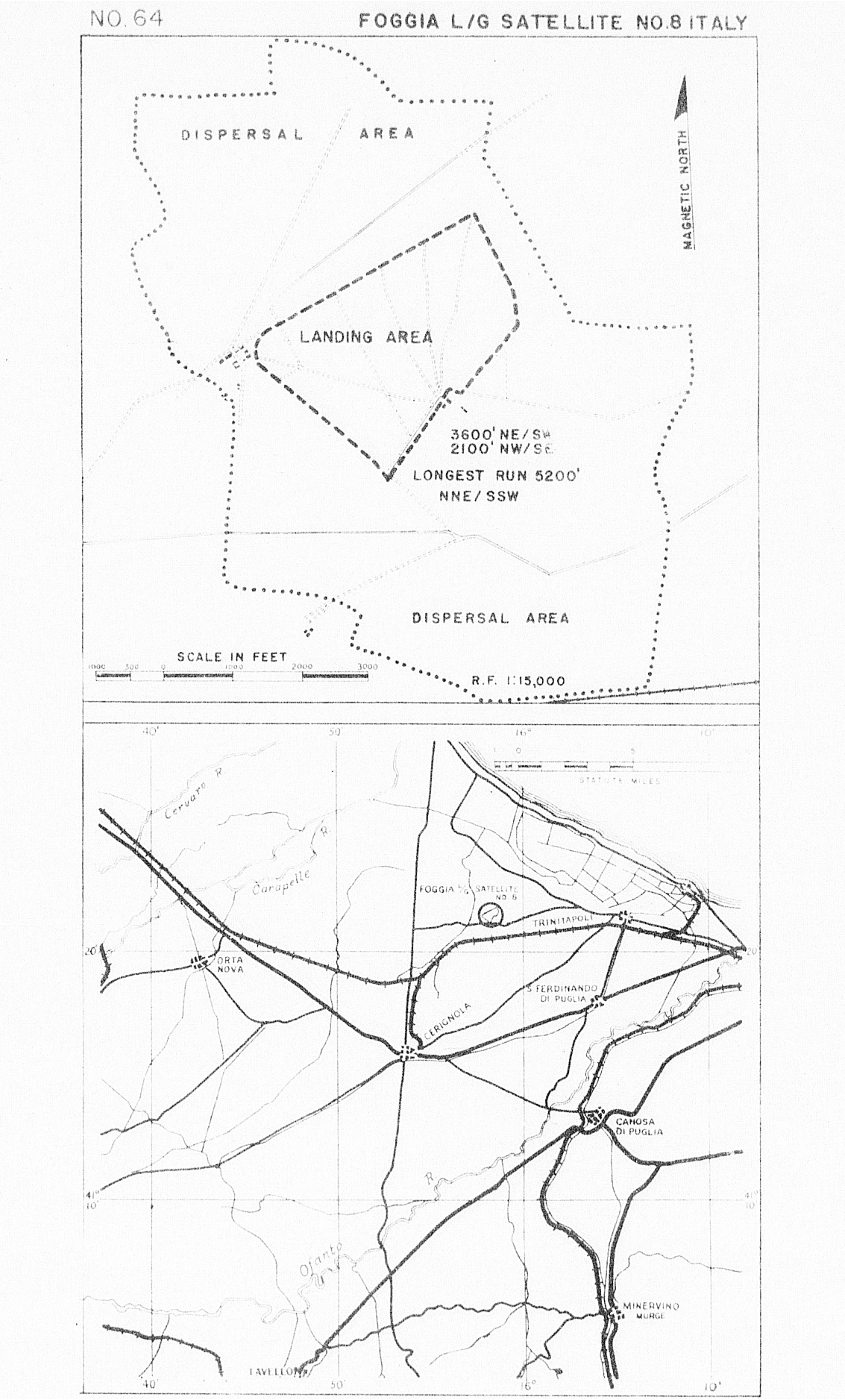
Individually many of our sources for the Foggia airfield complex are of limited value; used in combination with others, however, the same sources can be very informative.

The primary source used here is the Bradford Archive (Digital appx 1). Also important are a series of unpublished "airfield briefing charts" prepared from the NAPRW's aerial photographic coverage of the region, which show and roughly georeference most of the axis airfields in the region (USAAF 1943a: 829–76) (Figures 2 & 3; Digital Appx 2). The former, however, comprise mostly difficult to locate individual, and small groups of photographs only, while the later are approximately georeferenced only and sometimes unclear, and to be truly useful, both have to be used in conjunction with the 1950s 1:25000 Istituto Geografico Militare (IGM) maps of the region, over which they can be overlain, and which themselves fossilize many useful traces of airfield layouts (Figure 4). By doing this we can accurately scale and georeference the features visible. To achieve this, however, the researcher requires a detailed knowledge of both the photographs and maps.

Figure 1.

Bradford Archive aerial photograph from the 2nd of June 1945, showing Masseria Posta di Colle and the northwest end of Lucera airfield.

Next most important are the surviving physical traces of the airfields themselves—primarily soil marks from gravels that were laid beneath the runways of allied airfields by US Army Aviation Engineers (Fagg 1983: 261). These gravels comprise deeply weathered—and therefore pale—marine and fossil river terrace gravels, originally cemented at the top with a calcrete (known locally as *crosta*), which, when the ground has been ploughed, show up clearly against the predominantly brown silts of the Plain, both from the air and on the ground (Figures 5–7; see also Anon 2014a). Occasionally visible


NO. 64
FOGGIA L/G SATELLITE NO.8 ITALY
DISPERSAL AREA
MAGNETIC NORTH
LANDING AREA
3600' NE/SW
2100' NW/SE
LONGEST RUN 5200'
NNE/SSW
DISPERSAL AREA
SCALE IN FEET
1000 500 0 1000 2000 3000
R.F. 1:15,000
STATUTE MILES
Cervaro R.
Carapelle R.
FOGGIA L/G SATELLITE NO. 8
TRINITAPOLI
ORTA NOVA
S. FERDINANDO DI PUGLIA
CERIGNOLA
CANOSA DI PUGLIA
Ofanto R.
MINERVINO MURGE
LAVELLO
40'
50'
16°
10'
20'
41° 10'

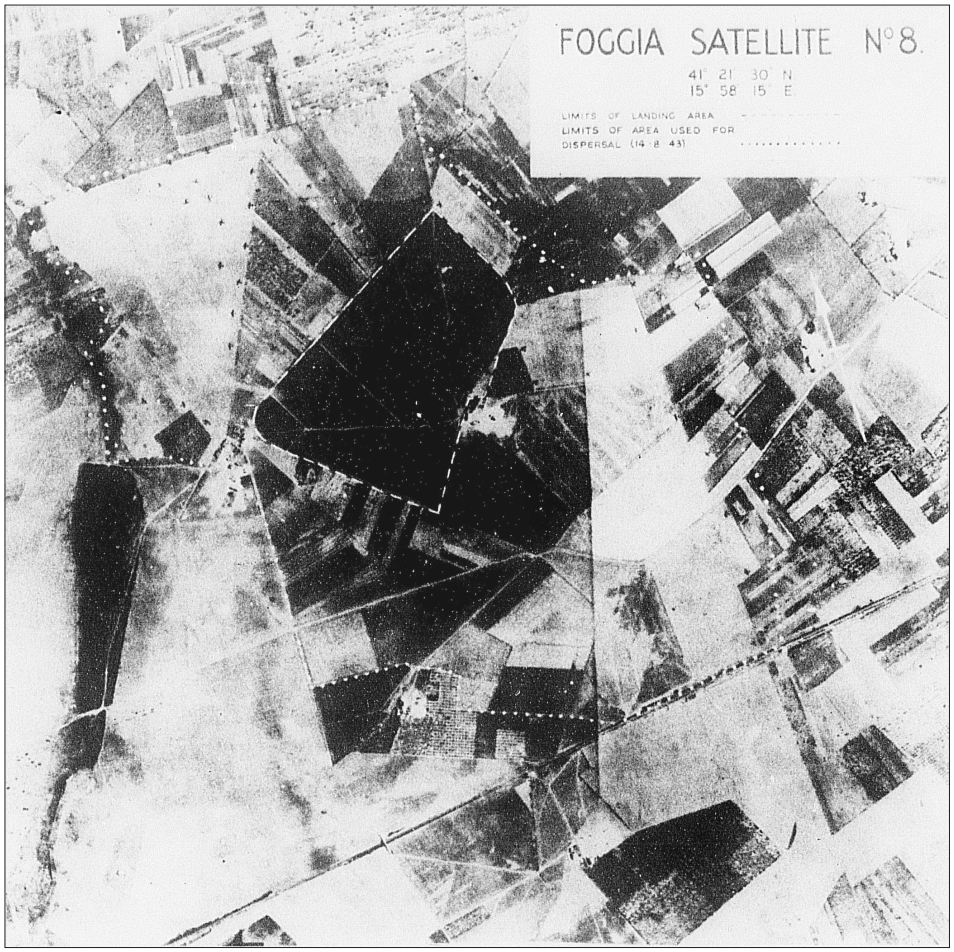


Figure 2 (opposite) and Figure 3 (above).

Allied airfield briefing chart from the 7th of September 1943, showing the axis airfield of Posta Uccello (Foggia satellite #8) (USAAF 1943a: 857, 860). Suplementary data recorded in these charts included, where available, the airfield's latitude and longitude, map and grid references, a description of the local position, the airfield's altitude, and details of the landing area (dimensions, surface and drainage), the dispersal area, facilities, access, air units present, possibilities for expansion, etc.

also are cropmarks, analogous to those showing prehistoric and Roman sites referred to above, resulting from differences in soil hydrology caused by these intruded gravels.

Other surviving physical traces of the airfields include farmhouses (*masserie*), formerly used as administrative buildings, identifiable as such because of their depiction as such in period photographs (Figures 8 & 9); recycled perforated steel planking (PSP), originally used to surface runways and hard-standings (e.g. Monaco 2016; Smith 1989) (Figure 10); the quarries from which the gravels for airfield foundations were extracted (Figures 68–70); and at the former airfield of San Giovanni—at least until recently—two rusty Nissen (or Quanset) huts (Figures 11 & 51).

Lastly, the surviving period and first hand written record, some of it synthesized (e.g. deZeng 2015: 81–88; Herrington 1963; Jefford 2001; Maurer 1982) and some original (e.g. USAAF 1943a–c; USAAF 1943–45; Jones nd.;

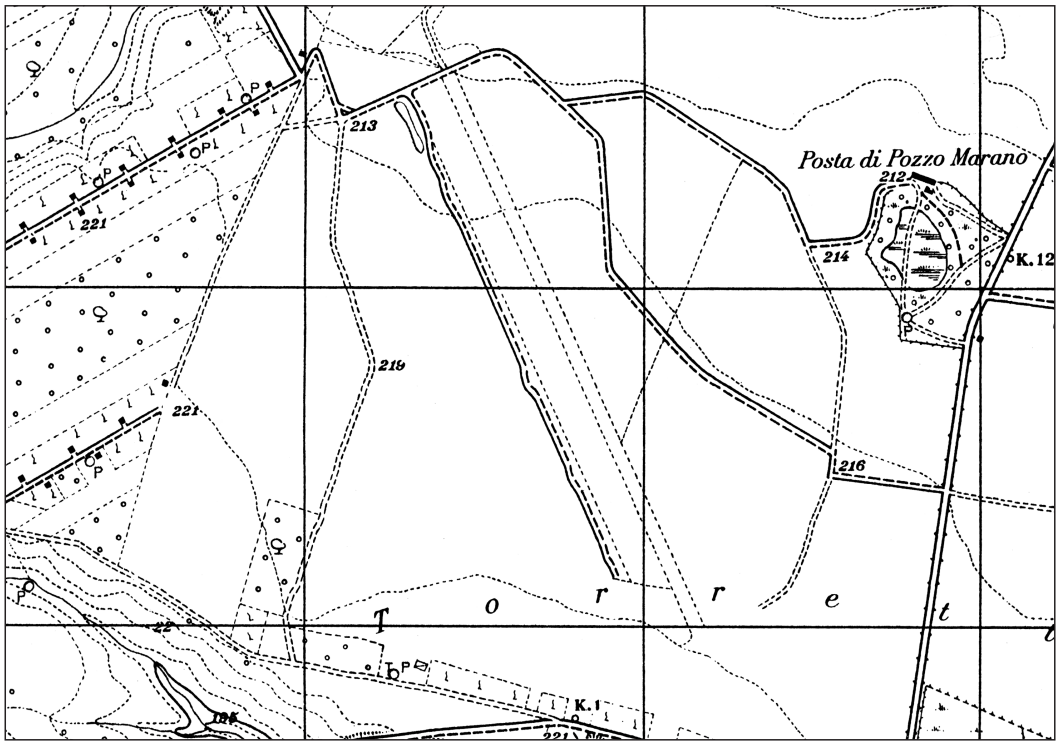


Figure 4.

1950s Istituto Geographico Militare 1:25,000 map (Borgo Liberta sheet) showing Torretta airfield. At this time, the airfield's taxiways were still tracks.

Figure 5.

Soil mark of the former US airfield of Torretta visible on Google Earth in 2010. The plan of the site remains clearly visible but the taxiways mapped om the 1950s IGM (above) are now under plough and the site bisected by the Autostrada dei Due Mari (A16).

Figure 6.

Compacting a gravel and *crosta* (calcrete) runway foundation at Améndola airfield with sheepsfoot rollers (upper right). The angular boulders in the foreground are lumps of uncrushed *crosta*. *Photo: Department of the Army 1952: fig. 162.*

Figure 7.

Identical gravel and *crosta* runway foundation at the former US airfield of Lucera in 2013. Note how the runway stands out against the surrounding ploughed soil. *Photo: MST*.

Figure 8.

Headquarters of the USAAF 483rd Bomb Group, stationed at Sterparone, in 1944–45. *Photo: Alpha Fowler Jr*.

Figure 9.

The more or less unchanged *masseria* on Google Earth in 2020.

Williams 1947) (Digital Appxs 2–4), gives details of which formations were stationed where and when (Digital Appx 5), and, when in axis hands, when and by whom they were bombed, and the damage done. While this usefully fleshes out our knowledge of these airfields with real people and events, for the most part, it is not germane to the present study. But there are important exceptions. For two allied airfields, of which there are no currently known APs, no detailed maps and no unambiguous traces on the ground, the names listed in period documents, along with some very rough estimates of their locations, are our principal sources. Additionally, by matching up different records, we can use them to correlate some of the different names used for different airfields and so eliminate duplication. Finally, by locating units by command type (such as the US Bomb Wing or Bomb Group), the original documentation makes clear which locations mentioned must be airfields, and which not.

The airfields

Broadly the airfields of the Foggia complex can be separated into four overlapping groups: 15 or 16 pre-existing Italian and new axis airfields (between one and seven of them originally prepared by the Italians, and the others, by the Germans) (Table 1); two British and British Commonwealth (RAAF, RAF and SAAF) airfields; 16 or 17 US Army airfields (several used by other allied air forces as well) (Tables 2–3), of which eight or nine were former axis airfields; and a single unattributed (but also probably US) airfield (also Tables 2–3).

Owing to their superficial nature and brief occupation, but for the written record and the APs, we would now know little of the form or location either of most of the axis, or of the British and British Commonwealth airfields on the Plain. By contrast, the US airfields, prepared at considerable expense to a pre-existing template by US Army Aviation Engineers (Fagg 1983: 261; War Department 1942; 1943; Williams 1947: 1632), have left behind them significant visible traces.

Up to a point, this difference is attributable to the different ways the combatants made war: imaginative and economical on the part of the Germans, economical on the part of the British, and stolid and expensive on the part of the US. In 1943, the US was still backed by a considerable economy, whereas by this date, the axis and British alike had been drained of resources. In addition, however, the airfields of the different combatants had different roles. Except for Gino Lisa, the airfield servicing Foggia town, in which the Italians had invested for the long term, the axis—and particularly the German—airfields were never intended as anything other than temporary, the equivalent of British temporary "Landing Grounds" and "Advanced Landing Grounds" (Jefford 2001: 283) and US "Advanced Landing Fields" (War Department 1942: 5); whereas the US airfields, although many began as "Advanced Landing Fields", were intended to be, and within months

Figure 10.

Re-used perforated steel planking (PSP) in 2017 at a *masseria* near the Torrente Celone, but several kilometres from Celone airfield, its nearest likely source. *Photo: MST*.

Figure 11.

Nissen or Quanset huts at San Giovanni in Fonte, former home of the USAAF 455 Bomb Group. After this photo was taken (in 2010) both huts were cleared from the site. *Photo: MST*.

developed into, "Field Aerodromes" and even "Airbases" (*ibid*.), for use in a long term campaign against Germany.

The only thing these airfields had in common was the need for a stretch of level ground long enough for an aircraft to land and take-off on, and initially perhaps, a potential for concealment, and this was the attraction of the axis airfields to the US Army Aviation Engineers who took them over. Hence, axis and probably also British airfields on the Plain were merely selected agricultural fields, which at the most had been levelled, whereas US airfields had a true, and enduring typology.

Axis Airfields

Except for Gino Lisa, axis airfields in the region appear all to have been simple earthen or grass fields without significant, purpose-built infrastructure (USAAF 1943a: 833–76). Unlike US airfields, their orientation appears to have been random—presumably dictated by the landscape rather than the prevailing winds—and they tended to be much shorter (Table 1). For most, a fair approximation of their locations, length and form (or lack thereof) can be reconstructed using plans in allied airfield briefing charts and the Bradford Archive photographs. It should be emphasised, however, that the extent of these axis airfields were not sharply defined spatially; and that the configuration visible in any single photograph, and mapped by the allies for their airfield briefing charts, was not necessarily the only one.

Current records of them are confused by uncertainties about which airfields were originally prepared by the Italians, and which not. There are also gaps and ambiguities in the record of which units were stationed where and when (Digital Appx 5).

Chris Dunning in his exhaustive books on the Regia Aeronautica, lists only Foggia as an Italian airfield, and places no units in the Foggia area at any time (Dunning 1998; 2009). According to local newspaper reports, however, the later allied airfields of Améndola and San Severo-Torre dei Giunchi, north of San Severo, neither of which are described in allied airfield briefing charts, were first prepared in the early 1930s, with the latter used as an emergency airfield (Anon 2019; Monaco 2016). Also widely attributed to the Italians—although on what evidence I have been unable to discover—are S. Nicola, "Cerignola" (most likely the later Giulia), Fandetta, Morin and Triolo (e.g. American Air Museum 2020a; deZeng 2015: 84; Wikipedia 2020a).

By contrast, identifiable German aircraft, were observed and photographed on airfields for which there is no other record of a Luftwaffe (GAF) presence, or which are otherwise inconsistent with the documentary record (such as Bf-109s and Ju-52s at Palmori, where only a bomber group—III.KG/54—is recorded) (deZeng 2015: 86; Digital Appx 5), while individual units are noted in different places at the same time (I.LG/1 at Gino Lisa and S. Nicola) (deZeng 2015: 83, 85; Digital Appx 5), suggesting, on the one hand, that the

Airfield	Allied use	Approx. length (kms)	Orientation	Coordinates (measured off APs)	Bradford Archive AP	Period record of axis aircraft	Axis records
Gino Lisa Foggia A/D	Foggia Main	1.6	NNW–SSE	41°26'22.4"N 15°31'56.8"E 41°25'35.5"N 15°32'24.7"E	yes	yes	GAF
S. Nicola Foggia #1	Celone	1.0	SW–NE	41°33'03.7"N 15°33'03.1"E 41°33'21.9"N 15°33'45.4"E	periphery only	yes	GAF
Tortorella Foggia #2	Tortorella	0.9	WSW–ENE	41°29'25.6"N 15°38'40.4"E 41°29'38.8"N 15°39'14.9"E	periphery only	yes	GAF
Palmori Foggia #3	Salsola	1.6	NW–SE	41°33'07.8"N 15°27'10.6"E 41°32'19.9"N 15°27'57.8"E	yes	yes	GAF
Fandetta Foggia #4	unknown	1.2	NW–SE	41°26'48.2"N 15°38'07.2"E 41°26'15.7"N 15°38'34.5"E	no	yes	no info.
Morin Foggia #5	unknown	1.2	WSW–ENE	41°24'52.3"N 15°54'42.0"E 41°25'04.1"N 15°55'34.0"E	yes	yes	no info.
La Lamia Foggia #6	unknown	1.2	WSW–ENE	41°17'05.2"N 15°26'04.0"E 41°17'20.6"N 15°26'53.3"E	yes	no	no info.
Triolo-Zanotti Foggia #7	Triolo	0.8	NNW–SSE	41°38'10.0"N 15°27'15.4"E 41°37'49.7"N 15°27'36.6"E	yes	yes	no info.
Posta Uccello Foggia #8	temporary airfield, 1943	1.2	SSW-NNE	41°21'19.2"N 15°58'09.2"E 41°21'52.5"N 15°58'26.8"E	no	yes	no info.
Triolo-Améndola Foggia #9	unknown	0.8	SSW–NNE	41°36'14.5"N 15°28'20.7"E 41°36'39.2"N 15°28'27.9"E	yes	yes	no info.
San Severo-S. Andrea Foggia #10	unknown	1.2 0.6	SSW–NNE NNW–SSE	41°37'34.4"N 15°24'31.1"E 41°38'07.9"N 15°24'55.3"E 41°38'24.5"N 15°23'35.8"E 41°38'06.8"N 15°23'44.8"E	yes	yes	no info.
Lucera-Seggio Foggia #11	allied vehicle store, 1945	0.6	NW–SE	41°30'01.1"N 15°22'19.2"E 41°29'52.2"N 15°22'41.8"E	yes	yes	no info.
Lucera-Nocelli Foggia #12	Lucera	1.1 1.1	WSW–ENE S–N	41°29'47.0"N 15°24'35.3"E 41°29'56.0"N 15°25'20.5"E 41°29'26.5"N 15°25'17.8"E 41°30'00.4"N 15°25'16.8"E	prior to its use only	yes	GAF
Améndola	Améndola	not known	not known	not known	no	no	no info.
Torre Giulia	Giulia	not known	not known	not known	no	post occupation only	no info.
San Severo-Torre dei Giunchi	San Severo	0.7	SSW–NNE	41°42'16.1"N 15°25'17.1"E 41°42'36.5"N 15°25'32.0"E	yes	possible	GAF

Table 1.

Axis and possible axis airfields on the Tavoliere Plain.

German record (as currently synthesized) is incomplete, and on the other, the opportunistic movement of GAF aircraft and units from airfield to airfield, rather than their permanent stationing at particular airfields.

Airfields that appear at a late date in allied records, such as San Severo-S. Andrea and Lucera-Nocelli, are *believed* to be originally German (e.g. deZeng 2015: 84).

Foggia-Gino Lisa

Gino Lisa was Foggia's main airfield before WW2 (Figure 12) and remains so today.

Figure 12.

Pre-war Italian postcard of Gino Lisa. *Photo: eBay*.

Allied airfield briefing charts describe it as having "a sod field, apparently drained". Infrastructure listed included a medical station, barracks buildings, workshops and five hangars with a concrete apron (USAAF 1943a: 831). Bradford Archive photographs show a laid—not just a grass—runway, in all the photographs partially covered by a textured, probably camouflage surface, and revetments for *c*. 35 aircraft in four widely spaced parts of the airfield. Zigzag slit trenches are visible behind the airfield buildings, and also scattered around the field (Figures 13–15). 142 aircraft "of all types" were observed there in January 1943 (*ibid*.). By contrast, Bradford Archive photographs from the 20th of August and 7th of September, show a handful only, including Ju-88s (some of them in the revetments), and—in the earlier photographs—a lone Ju-52, what looks like a biplane, and which may therefore be Italian, and a destroyed aircraft (Figure 15: bottom).

Both these photographs and others from the previous July show significant bomb damage to the airfield's hangars and quarters, but none to the runway.

S. Nicola, Foggia #1

S. Nicola was located *c*. 8 kms north of Foggia, close to the Torrente Celone. (Masseria S. Nicola d'Arpi, from which the name presumably derives, lies to

Figure 13.

Gino Lisa airfield in late summer 1943 (the 20th of August and the 7th of September). The buildings to the northeast have suffered from bombing but not, apparently, the runway. Note the aircraft revetments to the north, northwest, southwest and southeast, the many zigzag slit trenches and the lone Ju-52. *Photos: Bradford Archive*.

Figure 14.

Gino Lisa on the 20th of August 1943—detail the camouflaged runway. The covering overlies the perimeter track. *Photo: Bradford Archive*.

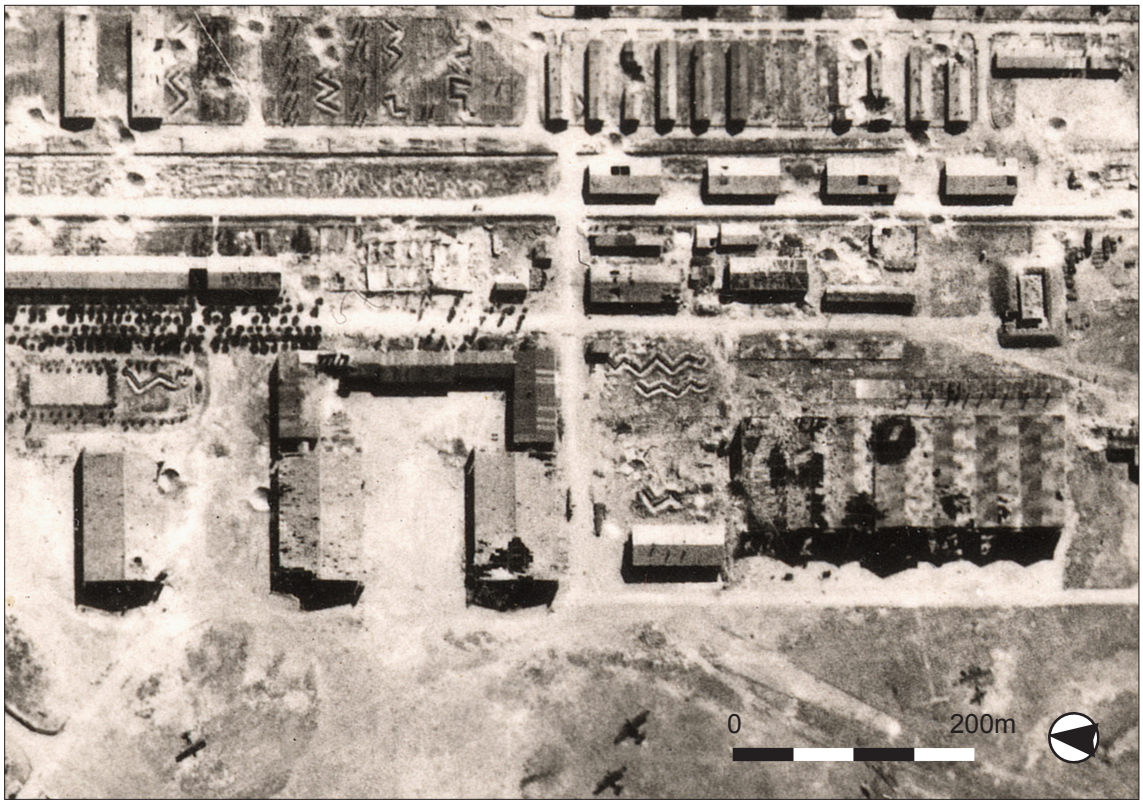


Figure 15.

Gino Lisa on the 20th of August 1943—bomb damaged hangars. *Photo: Bradford Archive*.

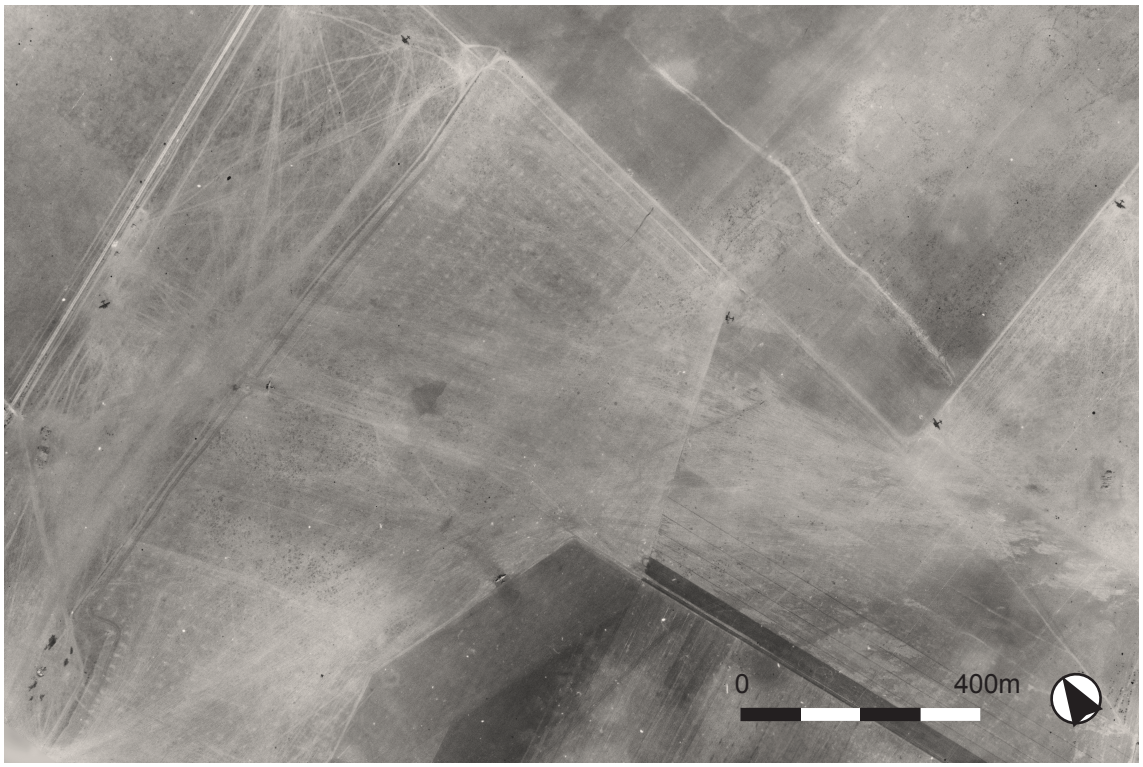


Figure 16.

Possible ancilliary runway c. 2.5 kms east of Tortorella on the 25th of August 1943. At least 10 Ju-88s were parked in the vicinity. Faintly visible in the upper right field is a cropmark of the Tavernola complex of Neolithic enclosures. *Photo: Bradford Archive*.

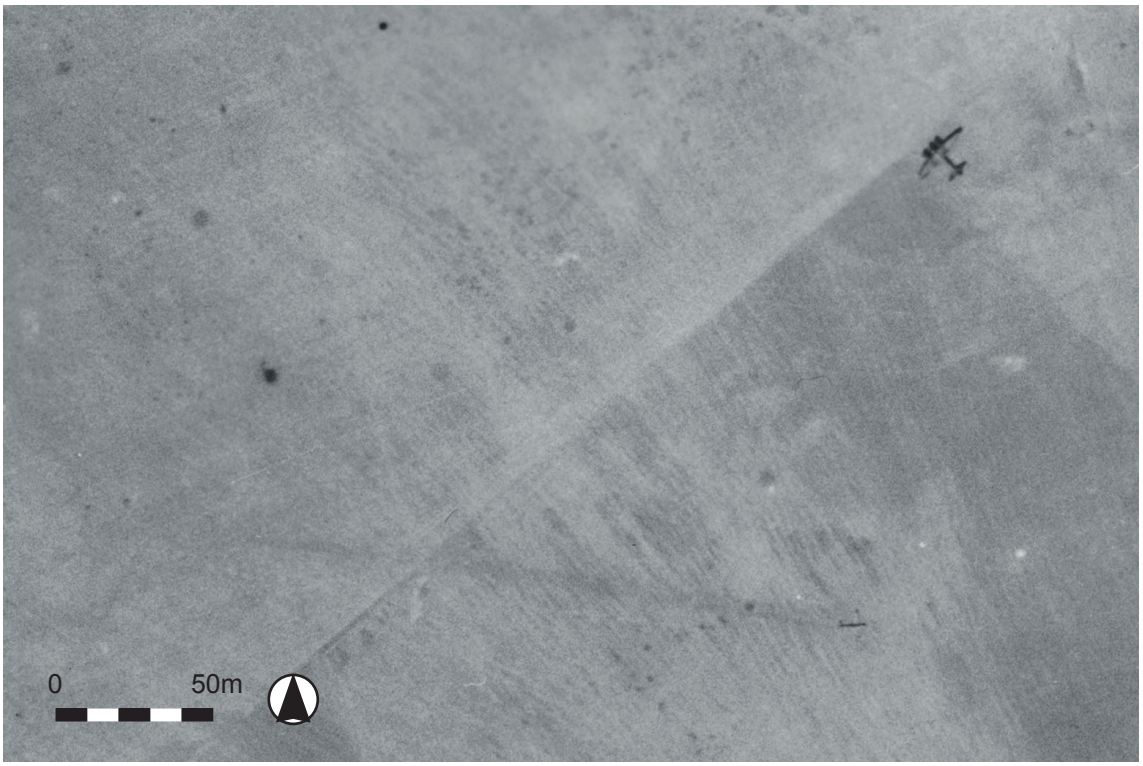


Figure 17.

Tortorella. Ju-88s and a possible crashed Bf-109 on the 25th of August 1943. *Photo: Bradford Archive*.

the south of it). It was later known as Celone, after the river. In early August 1943, the airfield comprised "graded soil" and 52 German aircraft (mostly Ju-88s) were observed there (USAAF 1943a: 835). There are no Bradford Archive photographs of the airfield prior to its reconstruction by the allies, but a photograph from the 19th of August 1943, shows two Ju-88s *c.* 1 km north-northwest of it; and photographs from the 7th of September, eight or nine to the south and southwest, with six in a widely spaced line extending well beyond the dispersal zone shown in allied airfield briefing charts (USAAF 1943a: 833). Also visible is a possible wreck.

Tortorella, Foggia #2

The axis airfield of Tortorella lay *c.* 8.5 kms east-northeast of Foggia, close to (the still extant) Tortorella railways station. The mapped runway ran parallel to the railway line.

Allied airfield briefing charts describe it as unsurfaced but apparently drained and refer to barracks buildings and an additional, prepared runway under construction. In June 1943, 60 aircraft, including 5 Ju-52s and 27 Ju-88s, were observed there, and in early August, 46 Ju-88s (USAAF 1943a: 839).

Again there are no Bradford Archive photographs of the mapped airfield, but two from the 25th of August, a day on which the airfield was bombed and strafed by the USAAF with numerous aircraft reported destroyed, show 10 Ju-88s parked up to 3 km east of it, along with a possible crash-landed fighter, no bomb damage, two huts (up against the railway line) and a great deal of surface scarring, some of it very likely indicative of aircraft take-off (Figures 16–17).

Palmori, Foggia #3

Palmori airfield was located *c.* 10.5 kms northwest of Foggia, between the hamlet of Palmori and Masseria Schifara, close to the Torrente Sàlsola, after which it was later known. Allied airfield briefing charts describe it as "levelled agricultural land" (USAAF 1943a: 843), the dark tones of the runway and surrounding fields in the APs confirming an early October 1943 description of it, as "a beautiful grass landing ground" (Lind 1946: 36). On the 30th of July 1943, single engine fighters were reported there and on 6th of August, 39 Ju-88s (*ibid*.).

Bradford Archive photographs show it on the 19th of August 1943 and the area around it on the 9th, the 12th and the 25th of August, when the USAAF claimed 11 aircraft, including a Macchi 202, a Bf-109, a Ju-52 and a Ju-88, destroyed there (Blake 2012: 42), and on the 7th of September. The photograph from the 19th shows the deeply scarred grass runway (Figure 18), 33 widely spaced Ju-88s, and a single smaller, square winged aircraft. In the others, aircraft, again mostly Ju-88s, but also two Ju-52s, are spread out up to 2 km away from the mapped runway to the west and (*contra* USAAF 1943a:

Figure 18.

Palmori on the 19th of August 1943. The pale strip to the upper left of the picture is the mapped runway. That to the right could be another runway or a taxiway to and from the runway to the western dispersal area. Another Neolithic site is discernable below this. *Photo: Bradford Archive*.

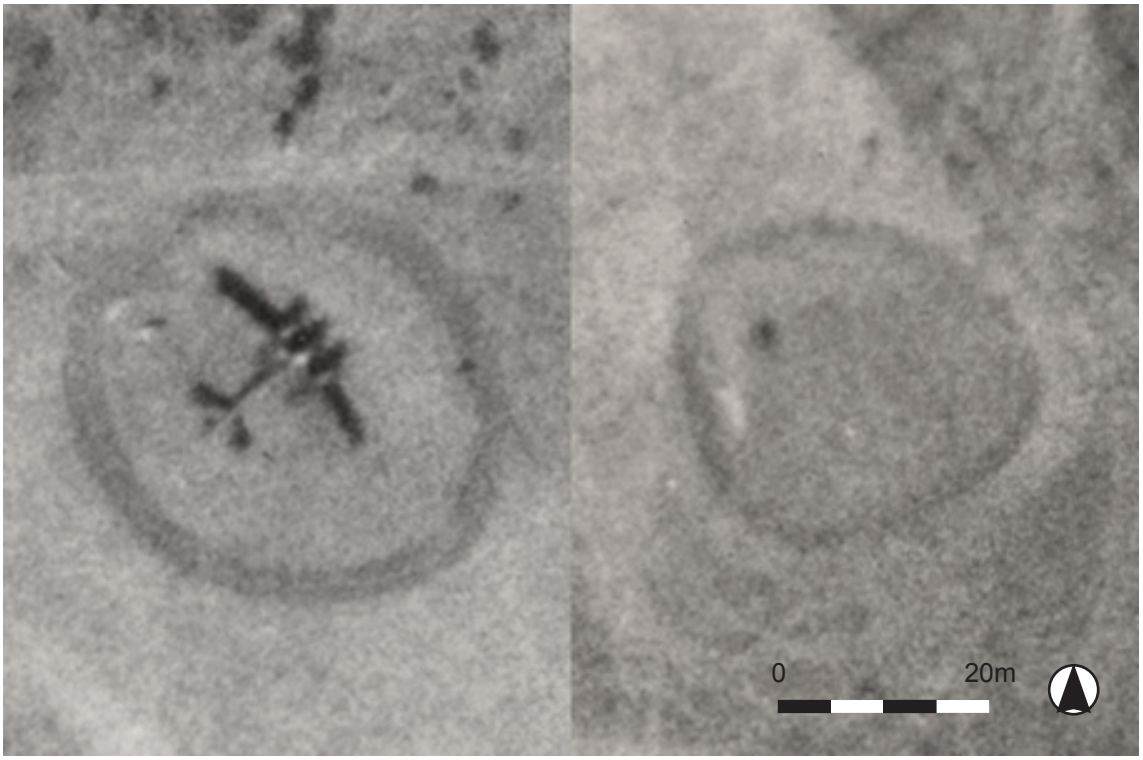


Figure 19.

Palmori on the 25th of August 1943. Circles around aircraft stands. *Photo: Bradford Archive*.

Figure 20.

Ju-88—possibly at Palmori—surrounded by a dark line. It is uncertain what these lines were for, or what they consisted of, but they demarcated aircraft stands. 13 are visible in Bradford Archive photographs of the airfield. Note the Gargano Massif in the background. *Photo: eBay*.

843) to the east. Numerous taxiways and up to two other runways are also visible.

One of the Ju-88s in the 25th of August photographs appears to be damaged.

Around some of the Ju-88s and visible elsewhere on the ground are dark circles (Figure 19). Photographs taken on the ground at an axis airfield in the region, possibly Palmori (Figure 20), indicate that these circles were ploughed, or—possibly—comprised vegetation cleared from the aircraft stands. In the photographs they resemble the cropmarks of so-called "C"-ditches, belonging a series of Neolithic ditch complexes, which underlie Palmori and the airfield's dispersal zone, and care needs to be taken not to confuse the two.

Fandetta, Foggia #4

Nothing is known of Fandetta airfield except what is in the allied airfield briefing charts. It was located *c.* 6 kms east-southeast of Foggia, and 2.5 kms west-northwest of the Fandetta crossroads. It was described in the airfield briefing charts as "levelled agricultural land" (it clearly crosses several different small fields), with a wide dispersal area. On the 4th of August 1943, eighteen single engine fighters were observed there (USAAF 1943a: 847) (Figure 21). There are no Bradford Archive photographs of the area.

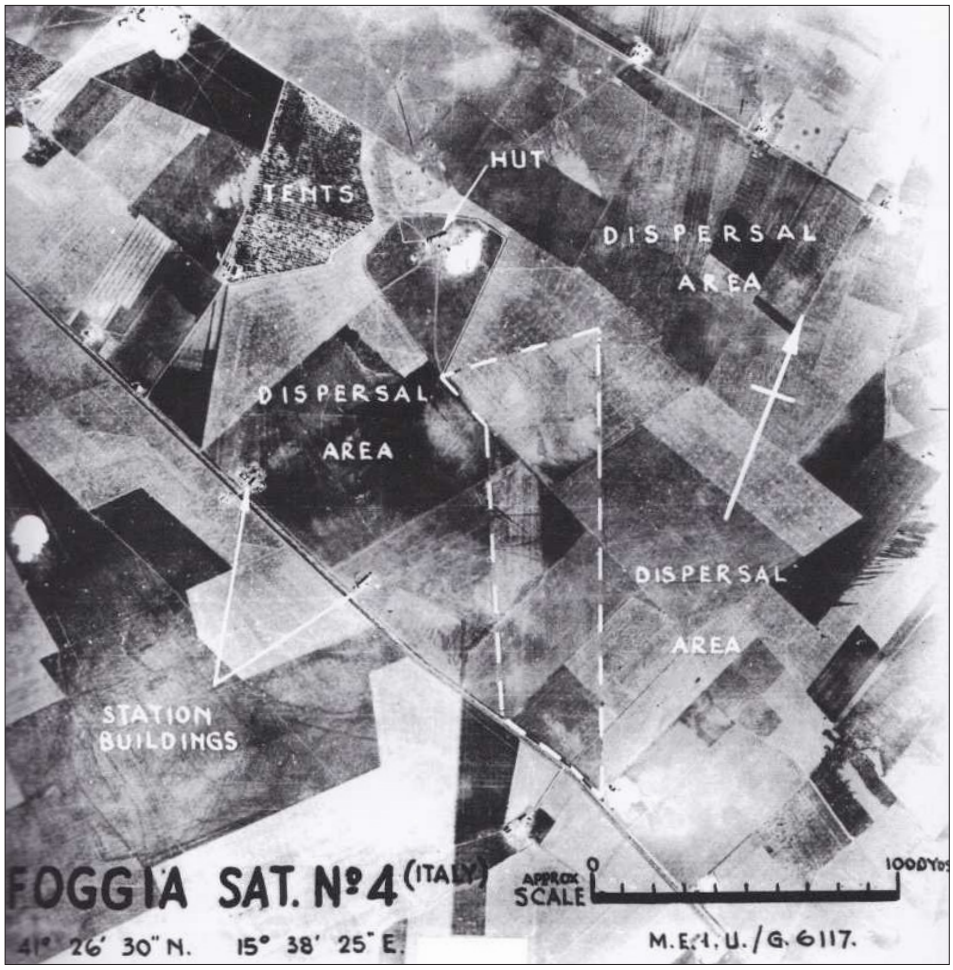


Figure 21.

Annotated photo of Fandetta from an allied airfield briefing chart.

Morin, Foggia #5

Morin was located in an area known as La Vangelesi, *c.* 5 kms inland of the Gulf of Manfredonia, on the main Manfredonia–Cerignola road. It was described as having a (probably) damp grass runway, and on the 4th of August 1943, 15 aircraft (14 Ju-88s and another) were observed there (USAAF 1943a: 851). The mapped runway ran parallel to the Canale Carapellotto (Figure 22).

The origin of the name "Morin", which is used in some period documents (e.g. USN 1943) is unknown. The 1950s 1:25,000 IGM map of the area shows no such name in the vicinity.

Bradford Archive photographs show it on the 24th of July and the 15th of August 1943. In the earlier photograph, which is low resolution, neither aircraft nor an obvious runway can be seen. In the later photographs, much scarring, both along the line of the mapped runway, and elsewhere, in particular parallel to the road, and four widely spaced Ju-88s are visible (Figure 22). Up against the *canale* levee near the southwest end of the mapped runway were two huts, possibly barracks buildings, around which were signs of considerable traffic, and a zigzag slit trench (Figure 23).

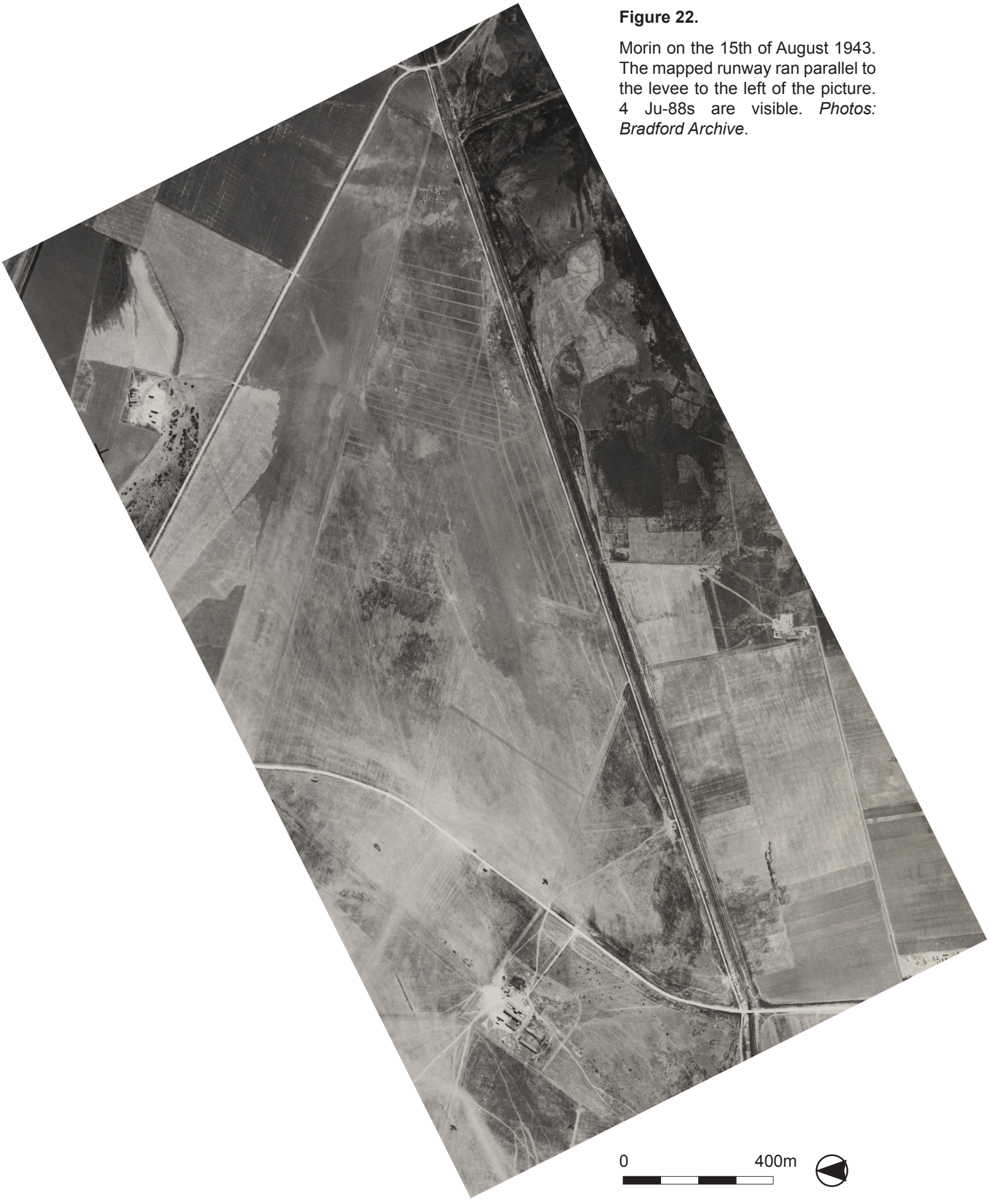


Figure 22.

Morin on the 15th of August 1943. The mapped runway ran parallel to the levee to the left of the picture. 4 Ju-88s are visible. *Photos: Bradford Archive*.

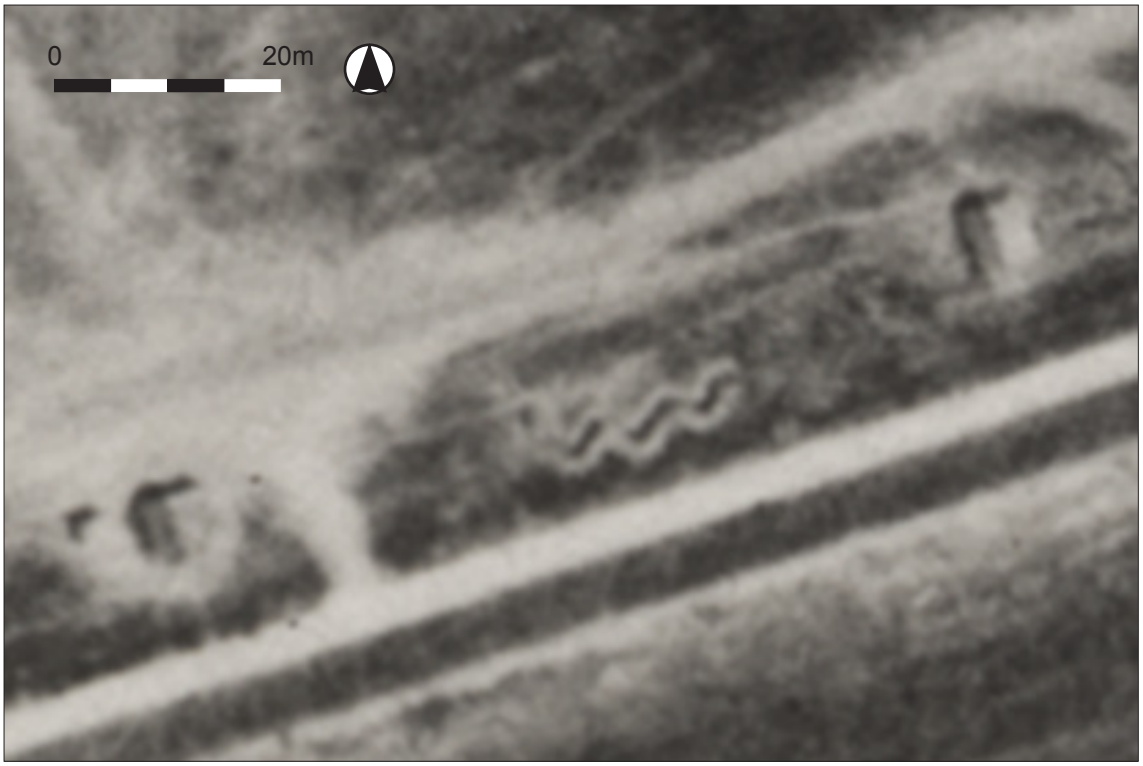


Figure 23.

Morin on the 15th of August 1943. A zigzag slit trench and two small huts (similar in size to a pair of huts visible near the ancilliary runway at Tortorella). Allied airfield briefing charts make no mention of purpose built infrastructure associated with this airfield.

Figure 24.

Morin in 2013, looking towards the site of the former huts along the line of the mapped runway.

Foggia #6, La Lamia

La Lamia was located in the south of the Plain, *c.* 2.5 kms southwest of Castelluccio dei Sauri, and 1.5 km east of Bovino airfield. It is sometimes called Radogna, after a nearby hamlet of that name. Allied airfield briefing charts describe it as "levelled agricultural land" (USAAF 1943a: 855). A Bradford Archive photograph from the 24th of July 1943 shows possible linear scarring of the postulated runway, but no aircraft appear ever to have been observed there.

Triolo-Zannotti, Foggia #7

Triolo-Zannotti airfield was located next to the Foggia–San Severo railway line, *c.* 8 kms southeast of San Severo. It was separated from nearby Triolo-Améndola airfield by the Torrente Triolo, after which it was later known. Allied airfield briefing charts show a clearly defined, probably grass runway (Figure 25). No details are available of the axis units stationed there but on the 25th of August 1943, USAAF pilots reported the destruction there of six aircraft, including a Macchi-C202, an FW-190 and a Ju-52 (Blake 2012: 42). Bradford Archive photographs from the 7th of September 1943, show the runway and the area around it. In these, some scaring of the ground can be seen to the southwest of Masseria Zannotti; and, in the fields roundabout, a probable Fieseler Storch and ten (unidentifiable) single engine aircraft (one in a dark circle analagous to those seen at Palmori). There are areas of bomb cratering to the northeast and southwest. The photograph showing the mapped runway is not sufficiently sharp to discern evidence of contemporary use but a single unfilled bomb crater is visible next to it (Figure 25: lower left).

Posta Uccello, Foggia #8

Posta Uccello airfield, elsewhere called Posta Augello (deZeng 2015: 82; RonaldV 2020), was located *c.* 5 kms inland the Riserva Statale Saline di Margherita di Savoia (formerly the Lago Salpi Nuova), immediately east-northeast of Posta Uccello. Allied airfield briefing charts describe a roughly rectangular field with a grass surface covered by light coloured tracks (USAAF 1943a: 359) (Figures 2–3). Nothing of the axis units stationed there is known but on the 16th of August 1943, 61 Ju-52s were observed there, very widely dispersed across the open fields and along the edges of plantations roundabout (*ibid*.) (Figure 3: upper left). After its capture by the allies, it was briefly used by the USAAF 57th Fighter Group (Hahn nd.: 34; McCarthy 2004: 60). There are no Bradford Archive photographs of the area.

Triolo-Améndola, Foggia #9

Triolo-Améndola (after the Torrente Triolo and nearby Masseria Améndola) was located 2 kms southeast of Triolo-Zannotti airfield. This airfield is *not* on the site of the later allied airfield of Améndola. Allied airfield briefing charts

Figure 25.

Triolo-Zannotti airfield on the 7th of September 1943. Scarring of the ground is visible in the field to the southwest of Masseria Zannotti, around which 11 single engine aircraft are parked. The mapped runway was in the dark area to the bottom left of the picture. *Photos: Bradford Archive*.

Figure 26.

Triolo-Améndola from the same run of photographs. There is no sign of the mapped runway, which ran diagonally (SSW–NNE) across the field in the centre of the picture. *Photo: Bradford Archive*.

describe it as "levelled agricultural land" (USAAF 1943a: 863). Once again nothing is known of the units that operated out of it but on the 16th of August 1943, four aircraft were reported there: a (?)FW-58 and three unidentified single engine fighters (*ibid*.); and on the 25th of August, USAAF pilots reported the destruction of four Ju-88s there (Blake 2012: 42). Bradford Archive photos show it on the 7th of September, at which date no evidence of an airfield was visible (Figure 26).

San Severo-S. Andrea, Foggia #10

San Severo-Sant' Andrea lay 6 km south-southeast of San Severo. It first came to the attention of the allies after the 15th August 1943, from which time primarily single engine fighters were observed there (12 on the 16th of August and 20 on the 18th). It is described as "levelled agricultural land" (USAAF 1943a: 867; USN 1943). Bradford Archive photographs show the airfield and the area around it on the 18th, the 19th, the 22nd and the 24th of August, and on the 7st and the 18th of September 1943 (Figures 27–29). Scarring visible in these suggests two runways, not one (Figures 28–29). Most also show single engine fighters, the majority of them tucked into the vineyards and olive groves surrounding the runways (six on the 19th, and ten on the 24th) (Figure 27). The photographs from the 7th of September also show a lone a Ju-52 (Figure 28).

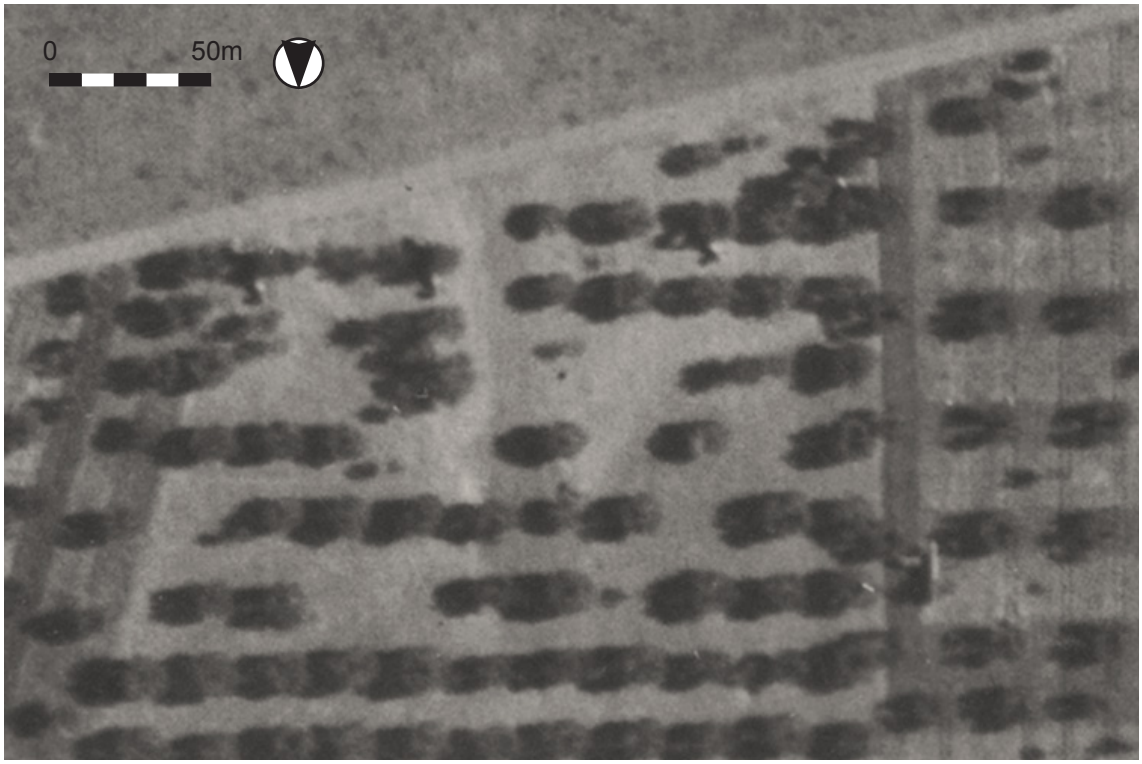


Figure 27.

San Severo-S. Andrea. Fighters hiding in a olive grove on the 19th of August 1943. *Photo: Bradford Archive*.


0
400m

Figure 28 (opposite).

San Severo-S.Andrea on the 7th of September 1943. The main runway ran along the side of the field in the bottom of the picture, next to the (darker) vinyard. Its scarred surface is clearly visible. The other ran diagonally across the field in the top left of the picture from the corner of the vinyard (see also Figure 29). Note the scarring around the vinyard leading to and from this field. *Photo: Bradford Archive*.

No details are available of axis units stationed at San Severo-S. Andrea, but the possibility should not be ruled out that units currently attributed to San Severo-Torre dei Giunchi, where no aircraft were observed by the NAPRW, in fact operated out of this airfield.

Figure 29.

San Severo-S. Andrea. The scarred surface of the unmapped, possible runway on the 28th of August 1943. Note the fighters hiding in the vinyard. *Photo: Bradford Archive*.

Lucera-Seggio, Foggia #11

Lucera-Seggio was located just to the north of the main Foggia-Lucera road, *c.* 2.5 kms east-southeast of Lucera, close to a conspicuous kidney-shaped medieval earthwork. Allied airfield briefing charts describe it as "agricultural land" and refer to two Fieseler Storch aircraft, observed there on the 27th August 1943 (USAAF 1943a: 871).

Bradford Archive photographs from the 20th and 22nd of August, show the short, scarred runway but no aircraft (Figure 30). (Three unidentified aircraft recorded there on the latter date were presumably in areas that fall outside our photograph) (USN 1943). Lucera-Seggio appears late in allied reports (e.g. USN 1943).

Figure 30.

Lucera-Seggio on on the 22nd of August 1943. The mapped runway, surrounded by a pencilled line on the original print, is to the right of the olive grove. Aircraft were reported at the airfield on this date but none are visible in this picture. *Photo: Bradford Archive*.

Lucera-Nocelli, Foggia #12

Lucera-Nocelli was located to the north of the main Foggia-Lucera road, *c.* 6.5 kms east-southeast of Lucera, and just east of the US airfield of Lucera. Allied airfield briefing charts show two runways at right angles to each other, described as "levelled agricultural land". A single fighter was observed there on the 27th August 1943 (USAAF 1943a: 875). Bradford Archive photographs of it from the 20th show no aircraft, and no evidence of a runway, and perhaps predate its adoption as such. It too appears late in allied records (USN 1943).

Améndola

The later US airfield of Améndola apparently "bore the marks of allied air raids" (Noles 2009: 74). Otherwise there is little evidence available either to confirm or refute the existence of an earlier, axis airfield on the site. There are no Bradford Archive photographs of the area prior to the construction of the allied airfield.

Cerignola

At least one and—possibly—as many as three later, US airfields in the Cerignola area may also have been axis airfields. When first occupied by the allies, the recent history of an unlocated, heavily mined Cerignola airfield,

Figure 31.

San Severo-Torre dei Giunchi on the 7th of September 1943. The pale line across the field to the right of the *masseria*, more or less on the line of the later allied runway, is perhaps the axis runway. (The strip running across the top of the picture is a post medieval drove road or *tratturo*). *Photo: Bradford Archive*.

"Penny Post" or "Pennypost", was indicated by the presence of shrapnel and destroyed German aircraft there (Lind 1946: 35–36); another, "Cirignala" [sic], the grid reference of which is that of the US Cerignola #1 or Giulia, is listed amongst the allies' airfields of "questionable existence" (AFHRA A6299: 697); and another, San Giovanni, is described in a modern history of the 741st Bomb Squadron, USAAF, which was stationed there, as "bombed by the 15th Air Force in 1943" and "in poor condition" (Ambrose 2002: 131). The obvious inference here is that Giulia or San Giovanni was Penny Post, the former identification, which is based on period sources, being the more supportable of the two options. None of these sites appears in Bradford Archive photographs pre-dating their construction or re-construction by the allies and nothing is known of their earlier form or of any axis units stationed on them.

San Severo-Torre dei Giunchi

The axis airfield of San Severo was located at Torre dei Giunchi (Figure 31), *c.* 3.5 kms northeast of San Severo.

According to Italian sources, it was prepared in the 1930s and used as an emergency airfield by the Regia Aereonautica (Monaco 2016). San Severo-Torre dei Giunchi is not referred to in allied airfield briefing charts but it

may be their "Apricena", which they placed a few kilometres north of Torre dei Giunchi, and classified as "questionable" (USAAF 1943a: 697). There is no record of its form, except that at the time of its adoption by the allies (*c.* October 1943) it was untenably muddy (Lind 1946: 121, 188). In a fuzzy Bradford Archive photograph from the 7th of September 1943, a possible runway scar, orientated SSW–NNE, is visible next to the *masseria* buildings, but no aircraft (Figure 31). A series of German photographs showing a Bf-109 are said to be at "San Severo" (e.g. Weal 2013: 63), while a photograph showing a destroyed Ju-52, taken by a USAAF laboratory technician based at the later US airfield on the site, is also placed there (Schoenfeld 2018: 23; nd.: 3).

British and British Commonwealth (RAAF, RAF and SAAF) airfields on the Plain

There are no official records of the structure of British and British Commonwealth airfields on the Plain and these must be inferred from anecdotal reports, photos taken on (as opposed to of) them, their short occupations, and the surviving physical record. For both, these suggest that, like Italian and German airfields, they comprised selected and levelled, but otherwise unimproved farm land. Most of the many British and British Commonwealth Squadrons based on the Plain operated out of US-built airfields (e.g. Figure 34; Digital Appendix 5).

Mileni

Mileni airfield (Figure 32) was not apparently improved and was presumably abandoned because of its unserviceability, reports describing it as (and photographs showing it to be) very muddy (e.g. Shoesmith nd.). Most likely it was close to Masseria Mileni (Table 2), *c.* 3 km north of Celone airfield, and close to its location as mapped by RAF historian Jeff Jefford (Jefford 2001: map 30.9). Its exact whereabouts, however, are uncertain, one report putting it two miles from Celone airfield (Smith 1989), another 15 miles north of Foggia Main (Jones nd.), distances, which are irreconcilable.

Palata

Two very different locations are mooted for Palata airfield, one in Molise (Anon 2014b: map; Martin & Orpen 1977: map 18), and therefore not of interest to us here, and one in the vicinity of Masseria Palata, *c.* 18 km east-northeast of Foggia (Jefford 2001: map 30.12; RonaldV 2020). An allied document of 11/43 apparently described it as "serviceable except immediately after heavy rain" (RonaldV 2020). There are no Bradford Archive photographs of the Puglian Palata, and so far it has proved impossible to match any of several possible photographs of the airfield, either with the 1950s 1:25,000 IGM map of the area or aerial coverage provided by Google Earth. My view therefore is that the correct location for Palata, is the Molise one.

Figure 32.

RAAF P-43 Kittyhawk *said* to be at Mileni airfield. Note the levee and the Gargano Massif in the background. *Photo: Laurence Le Guay (AWM: MEA0891)*.

Regina

Jefford places Regina airfield northwest of Foggia, a few kilometres south of San Severo (Jefford 2001: map 30.9; see also anon nd.) but once again there is no certainty about its exact location. Like Mileni, it was—at least initially—unimproved, one airman characterizing the runway as a mud track with a wooden tower (Bowman 1990: 142). The name Regina occurs in only one place on the Plain that would have been suitable for an airfield, Motta Regina, where there is a Masseria Motta Regina, a medieval earthwork known by this name, and a *masseria* formerly known as Regina (now Masseria Pezza Nera) (Salzano & Baioni nd.). Motta Regina lies northwest of Foggia, more or less equidistant between Lucera and San Severo (Table 2).

US Army Airfields

In APs such as those comprising the Bradford Archive, the principal distinguishing characteristics of US airfields on the Plain are their runways, taxiways and hard-standings, the forms and lay-out of which came straight out US Army Aviation Engineer technical manuals (War Department 1942; 1944). These were echoed, though not paralleled exactly, in US-built airfields from Normandy to Saipan.

Their guiding principals were concealment from the enemy, dispersal, to prevent the destruction of aircraft on the ground, and the safe and easy

Airfield	Axis use	Coordinates		Bradford Archive AP	Other period AP	IGM	Google Earth
US		***west end***	***east end***				
Amendola	?Italian	41º32'38"N 15º41'50"E	41º32'12"N 15º43'14"E	whole	USAAF 2/45	omitted	modern airfield; partial soil mark
Celone Foggia sat. #1	GAF	41°33'29.9"N 15°33'06.4"E	41°32'43.0"N 15°33'52.3"E	whole	SAAF oblique; Volo Base 1954	*c*. 30% taxiway	soil mark
Castelluccio	no	41°19'18.7"N 15°32'04.7"E	41°19'04.3"N 15°33'20.3"E	whole	USAAF oblique 1944; Volo Base 1954	*c*. 40% taxiways	soil mark
Foggia Main	Italian	41°26'21.7"N 15°31'52.7"E 41°25'22.4"N 15°31'16.8"E	41°25'34.4"N 15°32'20.1"E 41°25'46.7"N 15°32'25.7"E	whole	none	omitted	modern airfield
Giulia Cerignola #2	GAF	41°18'44.0"N 15°49'51.1"E	41°17'42.3"N 15°50'31.5"E	no	USAAF nd.; IGM 1953	nothing	nothing visible
Lesina	no	41°51'28.0"N 15°17'55.4"E	41°52'15.2"N 15°18'32.3"E	no	USAAF 5/45; Volo Base 1954	nothing	soil mark
Lucera Foggia sat. #12	GAF	41°30'08.6"N 15°25'05.2"E	41°29'28.7"N 15°26'03.1"E	whole	WW2 nd.	*c*. 35% taxiway	soil mark
Pantanella	no	41°07'50.7"N 15°54'40.9"E	41°08'12.9"N 15°55'52.8"E	part only	WW2 obliques	stretches of runways & taxiways	partial soil mark
Salsola Foggia sat. #3	GAF	41°32'60.0"N 15°27'12.4"E (visible)	41°32'32.4"N 15°27'41.2"E	near whole	none	nothing	partial, faint soil mark
San Giovanni Cerignola #2	no	41°14'35.4"N 15°47'55.5"E	41°13'41.0"N 15°48'29.3"E	whole	WW2 oblique; IGM 1953	nothing	soil mark
San Severo	?Italian	41º43'03"N 15º24'42" E	41º 22'24"N 15º25º43'E	no	USAAF 5/45	runway; *c*. 80% taxiways	soil mark
Sterparone	no	41°36'32.5"N 15°18'08.1"E	41°35'58.3"N 15°19'11.9"E	part only	1945; Volo Base 1954	*c*. 17% taxiway	soil mark
Stornara	no	41°17'40.6"N 15°43'51.7"E	41°17'09.4"N 15°44'58.4"E	whole	WW2 nd.; Volo Base 1953	runway	soil mark
Torretta Cerignola #3	no	41°11'33.4"N 15°46'00.1"E	41°10'39.1"N 15°46'32.3"E	part	WW2 late 1944; USAAF 5/45; IGM 1953	runways; *c*. 70% taxiways	soil mark
Tortorella Foggia sat. #2	GAF	41°29'25.3"N 15°38'44.2"E	41°28'43.5"N 15°39'40.8"E	no	WW2 2/45; WW2 oblique	*c*. 20% taxiway	soil mark
Triolo Foggia sat. #7	GAF	41°37'50.7"N 15°27'04.7"E	41°37'11.3"N 15°27'43.6"E	part only	1945; 4/44 oblique	nothing	soil mark
Vincenzo/ (Torrebianca-S. Giusta)	no	41°24'42.2"N 15°26'24.2"E	41°25'07.5"N 15°27'18.3"E	no	none	nothing	nothing visible
British		***proximity of***					
Mileni	no	41°36'04.1"N 15°34'10.1"E		no	none	nothing	nothing visible
Regina	no	41°36'21.3"N 15°23'56.7"E		no	none	nothing	nothing visible

Table 2.

Allied airfields on the Tavoliere Plain.

movement of the aircraft from the ground to the air. Ideally, airfields were to be laid out congruent with and therefore disguised by the existing landscape (War Department 1942: 82). Taxiways were to be formed of loops, accreting as needed, to provide alternative accesses to the runway, and comprise short straight stretches with as few right-angular turns as possible (War Department 1944: 36). Hard-standings, were to be arranged in groups of three, and/or arranged close to or extended back from the taxiway in such a way that they did not line up, while providing sufficient accommodation for a single squadron in the part of the airfield in which they were located (War Department 1942: 82: fig. 50). Runways were to be orientated close to the direction of the prevailing wind (*ibid*.: 77). They were to be 5000–6000 feet long (*c*. 1500–1800 m), for heavy bombers, and 4000–4500 feet long (*c*. 1200–1400 m), for fighters, and 150–200 feet wide (*c*. 45–60 m), with a 300–500 feet wide (*c*. 90–150 m) safety zone (*ibid*.: tab. 2). The shoulder either side of the runway was to be stabilized to take aircraft and seeded, and the steel plate comprising the runway, laid at right angles to it. (*ibid*.: fig. 97). Hence the characteristic airfield type of a runway with a wide grassy margin surrounded by an angular taxiway, or a network of angular taxiways, off which projected both simple, and extended hard-standings. This of course made them—and, where they were underlain by a distinct and enduring foundation, continues to make them—unambiguously visible on the ground, enabling us definitively to establish their locations and form during WW2.

Due to differences in the types and numbers of aircraft operating out of them, however, and changes in these, individual airfields differed both from each other and over time, and it is possible to sub-divide the general type into a range of sub-types, each corresponding to a different role, or a different stage in the airfield's the development. There were also different ways of realizing the basic template, not all of which were used for, or successful on, every airfield, which led to further differences and changes.

Individual US airfields on the Plain fall into one (and in several cases, more than one) of nine, clearly distinguishable sub-types (Table 3). Type 1 consisted of a single, relatively short runway with a single taxiway on one side only. Type 2 also consisted of a single, relatively short runway, but had a more developed network of taxiways, also on one side only (Figure 42). Type 3a consisted of a single, relatively short runway, with a single taxiway, which extended all around the airfield. As is shown by the combat groups stationed on them, where located on the Plain, these three types of airfield were for fighters. Type 3b was the same as Type 3a but had a longer runway (Figure 43). Type 4a had a single long runway and a taxiway all around, to which ancillary loops had been added on one side only (Figure 56). Type 5a had a single long runway, and an inner and outer network of taxiways on both sides of this (Figure 38); and type 5b, two or more long runways, laid out parallel to each other, and an inner and outer network of taxiways on both sides of these (Figure 36). These latter types were designed to take heavy bombers.

Airfield	Type(s)	Runway length (kms)	Runway orientation	Hard-standings (type)	Hard-standings (nos)	Associated quarries
Amendola	5b	1.9	WNW–ESE	Simple Extended	182	41°32'37.1"N 15°43'32.8"E
Celone Foggia sat. #1	5a or 5b	1.8	NW–SE	Simple Extended Loop	158	41°33'52.1"N 15°34'50.2"E (possible)
Castelluccio	4a 5a	1.8	WNW–ESE	Simple	74	
Foggia Main	5c	1.5 1.8	NNW–SSE WSW–ENE	Simple		not known
Giulia Cerignola #2	3b	2.1	NNW–SSE	Simple Extended	*c.* 65	41°17'10.5"N 15°49'42.9"E
Lesina	2	1.7	SSW–NNE	Simple Extended	53	41°51'52.9"N 15°18'02.4"E
Lucera Foggia sat. #12	3b	1.8	NW–SE	Simple Extended	78	41°30'44.6"N 15°25'15.8"E 41°29'41.8"N 15°23'39.7"E
Pantanella	5b	1.8	SW–NE	Simple	143	41°09'10.5"N 15°55'44.4"E
Salsola Foggia sat. #3	1 then 2; or 2	>1.1	NW–SE	Simple Loop	unknown (>50)	not known
San Giovanni Cerignola #2	5b	1.9	NNW–SSE	Simple Extended	134	41°14'16.5"N 15°49'12.6"E 41°14'32.9"N 15°48'40.8"E 41°14'54.1"N 15°47'48.1"E
San Severo	1 or 2; 4b	1.6 1.9	SSW–NNE NW–SE	Simple	80	not known
Sterparone	3b	1.8	NW–SE	Simple	*c.* 65	41°34'41.8"N 15°19'06.6"E (possible)
Stornara	4a	1.8	NW–SE	Simple	100	41°16'56.2"N 15°45'30.7"E 41°16'56.2"N 15°45'30.7"E 41°17'49.2"N 15°43'07.0"E
Torretta Cerignola #3	4 or 5a; then 5b	1.8	NNW–SSE	Simple Extended (later modified to simple)	144	41°11'46.3"N 15°46'01.4"E 41°11'42.4"N 15°45'33.3"E 41°10'25.1"N 15°46'27.1"E 41°10'20.5"N 15°46'49.6"E 41°10'18.4"N 15°47'00.2"E
Tortorella Foggia sat. #2	5a	1.8	NW–SE	Simple	*c.* 130	not known
Triolo Foggia sat. #7	3a then 4a	1.5	NW–SE	Simple Extended	*c.* 85	not known
Vincenzo/ Torrebianca-S. Giusta	2	1	SW–NE	N/A	none	not known

Table 3.

US airfields on the Tavoliere Plain: statistics.

Two further sub-types had two runways, which crossed each other: type 4b with a single taxiway all round (Figure 52) and type 5c, with an inner and outer network of taxiways all round (Figure 33). Both of these represent a divergence from the principal laid down in the Aviation Engineers' manuals (War Department 1942; 1944).

The other principal variable visible in Bradford Archive photographs is the hard-standing, which is divisible into three sub-types (all used for both

bombers and fighters): "simple", which projected the minimum allowable distance from the taxiway (Figure 44: left), and "extended" (often described as "frying pan" type) (Figure 44: right), both of which necessitated the turning of the aircraft, and "taxi through" or "looped", a form that allowed the aircraft to taxi in and out without being turning round (Figures 39–40) (War Department 1944: 41–43). Most airfields on the Plain had simple and extended hard-standings but, as is shown by the replacement of extended by simple ones at two airfields, and their predominance on later airfields, there was a trend away from the former to the latter—perhaps because, with the advance of the front, the former were no longer considered necessary; perhaps to reduce maintenance. Looped hard-standings were only present on three airfields. Also we see an increase in PSP over time; the late construction of hangars; and, at one airfield, a unique third runway...

This all adds to our knowledge and understanding, but, as with the axis and "British" airfields, issues remain unresolved. We know reconstruction or construction of US airfields on the Plain took time, usually more than scheduled (Fagg 1983: 261), but for most, we do not know when, or even if, they were finished. Dating is based largely on unit movement, not job completion, which did not always coincide. There are few descriptions and no APs of them when first operational in 1943 and early 1944, and we know little of their early form. We even lack hard evidence of the identity of one known, but probable US airfield. Finally, there are gaps in the available period record (USAAF 1943–45), which make it impossible fully to place these airfields in operational context. We do not know, for example, which USAAF Service Squadrons were stationed where between January and June 1944 and after December 1944. As a field of study, therefore, many aspects of the US Foggia airfield complex remain open.

Foggia Main

The US reconstruction of Gino Lisa, or Foggia Main as it was re-christened by the allies, was underway by October 1943 (USAAF 1943c: 673), but, as photographs of it show, improvement works continued till the end of the war.

The new airfield comprised two runways, one short one, more or less on the line of the original Italian runway (and "unsuitable for 'heavies'") (Hess 2003: 25), and a longer one at right angles this, crossing it at its southern end (Figures 33), both ultimately surfaced with PSP. The first was finished by the beginning of December 1943, and the second by the end of the following month (Fagg 1983: 261), though apparently without a PSP surface (Figure 33). It had an inner and outer network of taxiways, supplied with dispersed hard-standings, and, at the end of the war, an area of concentrated aircraft parking. In 1945, it was surrounded by three spatially separated and much trodden "tent cities".

Bradford Archive photographs show it on the 30th of April and the 19th of May 1945, between which times the second, longer runway and an extended

Figure 33.

Foggia Main on the 30th of April 1945. *Photos: Bradford Archive*.

Figure 34.

RAF Wellingtons at Foggia Main. Note the refurbished Italian hangars in the background. *Photo: Penny Draper.*

hard-standing/ apron in the hanger area were PSP-surfaced (Figure 35). The earlier photographs show over 100 aircraft but are insufficiently clear to identify these to type with any certainty, but in the later—which do not cover the whole airfield—we can see B-17s, B-24s, what look like Consolidated flying boats as well as some smaller aircraft.

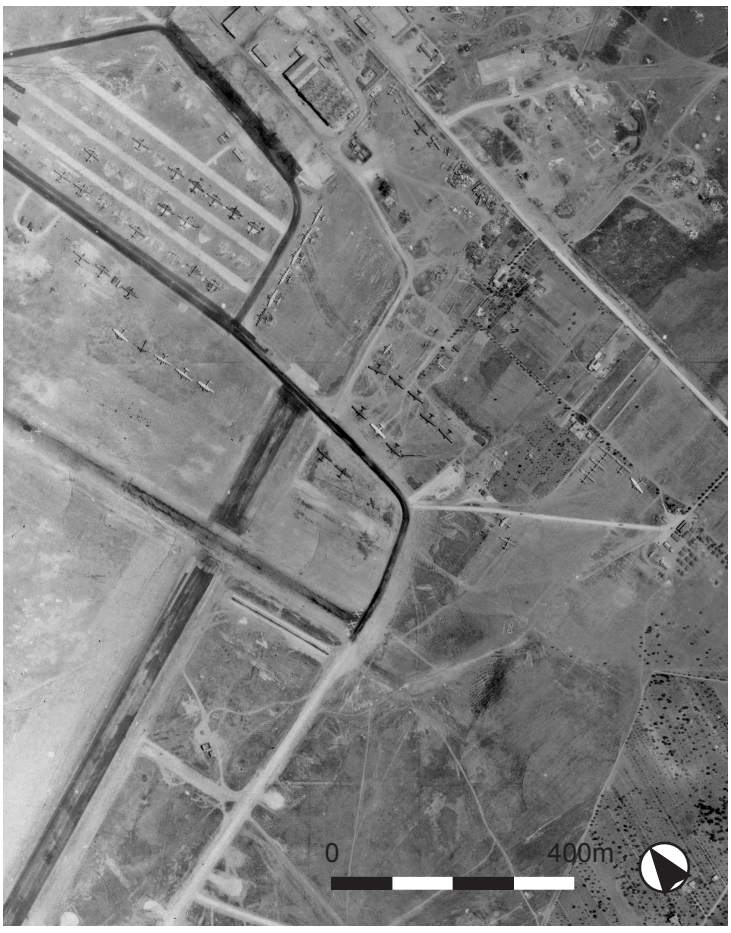


Figure 35.

Foggia Main on the 19th of May 1945. Both runways are now PSP-surfaced, as is a new hard-standing in front of the hangars. *Photo: Bradford Archive.*

Figure 36.

Améndola airfield on the 23rd of May 1945. *Photos: Bradford Archive*.

Améndola

After Foggia, Améndola was one of the first US airfields in the Foggia complex to be readied for operational use, the first combat units arriving there in late October and late November 1943 (Maurer 1982; Jefford 2001). It was also the biggest. Photographs and plans show two—and sometimes three—parallel runways, which are described as, and in some photographs clearly are, PSP-surfaced (Figure 33) (e.g. USAAF 1943c: 673; Noles 2009: 74); and an inner and outer network of angular taxiways with 180-odd hard-standings of the simple and extended types (*contra* American Air Museum 2020b) (airfield type 5b). As at Foggia Main, however, work on the site was ongoing, and, as comparisons between our photographs and earlier photographs and plans of the airfield show, the runways were not static, but moved from side to side—presumably to facilitate repair without interrupting combat operations.

Figure 37.

Améndola on the 1st of June 1945. Detail of hangar and Nissen hut in engineers area. *Photo: Bradford Archive.*

Bradford Archive photographs show the airfield on the 30th of April, the 23rd of May and 1st of June 1945. In all these photographs large numbers of aircraft are visible, in the 23rd of May photographs, which are both high resolution and cover the whole airfield, B-24 Liberators to the southeast and B-17s everywhere else. In the April photographs, there are three extant PSP-surfaced runways (cover: upper right); by May, however, the southernmost of these had been dismantled. We can also see a hangar (close to the Foggia–

Figure 38.

Castelluccio airfield on the 29th of April 1945.
Photo: Bradford Archive.

Foggia–Manfredonia road) and, spread around the field, several large Nissen huts as well as many small buildings, clearly related to the airfield rather than the pre-existing farm (Figure 34); and there are tent encampments to the southwest, to the northwest (apparently home to the men of British squadrons that operated out of the airfield), in olive groves to the north and to the southeast, and by the side of the Foggia–Manfredonia road, *c*. 6 kms to the northeast.

Castelluccio

Castelluccio airfield was located *c*. 15 kms south of Foggia, close to the modern SS655 dual carriageway. It was operational from April 1944 (Maurer 1982).

It comprised a single PSP-surfaced runway, with, on one side, a broad grassy strip, surrounded by an angular taxiway, to which additional angular lobes were added, first to the north side side only (visible in a photograph attributed to May 1944) (García Sánchez 2018: fig 3b) and then later to the south side (visible in Bradford Archive photographs from the 29th of April 1945) (Figure 38)—that is to say, it evolved from a type 4 airfield into a type 5a airfield. It had hard-standings of the simple type. The Bradford Archive photographs show five tent encampments, each of which corresponded to a different named squadron (*ibid*.), a hangar, and a number of huts unrelated to the farm. Also visible are 50-odd aircraft, where identifiable to type, all B-24 Liberators.

Celone, Foggia #1

Celone airfield was located directly on, but at right angles to, the former axis airfield of S. Nicola. It had two parallel runways, of which one only was PSP-surfaced with a foundation that shows up today as a soil mark, and an inner and outer network of angular taxiways, from which projected, on one side of the runway, simple hard-standings, and on the other, single and double looped hard-standings (airfield type 5a or 5b, depending on whether the unsurfaced runway was operational as such or not) (Figures 39–40). In some photographs (but not those in the Bradford Archive), most of the taxiways are part PSP-surfaced (cf. Burch: 2005: 70).

Celone was operational from October 1943 but its renovation, scheduled for completion in early November (USAAF 1943c), was not in fact ready till the following year, the first US combat units arriving there in March 1944 (Maurer 1982). Reports from as late as January 1945, when its runway was closed for "repair" (presumably raising), describe it as unserviceable due to bad weather (Burch: 2005: 69–70; Casement 2011).

Bradford Archive photographs show it on the 29th of April 1945. In these, a single hangar, four large Nissen huts, and significant numbers of buildings unrelated to the farm—though probably fewer than at Améndola and some other US airfields—are visible, along with a major tent city around Masseria

Cantone, about 1.5 km to the southwest, and two smaller ones beyond this. There was a wooden control tower part way down the runway (Burch 2005: 70). Visible aircraft in the photographs include 34 B-24 Liberators on the hard-standings off the outer, northwest taxiway, from which the 2nd (SAAF) Wing operated, and what look like B-17s elsewhere (*c.* 36), together with a single smaller, unidentified aircraft.

Figure 39.

Celone on the 29th of April 1945. B-17s parked on taxi-through/ looped hard-standings. Note the PSP surfaces *Photo: Bradford Archive.*

Cerignola

Wikipedia describes Cerignola airfield as follows: "Captured Regia Aeronautica airfield used by Twelfth and Fifteenth Air Force and as both operational airfield for heavy bombers and tactical fighters. Also major command and control headquarters [...] Very clear outline visible today in aerial photography" (Wikipedia 2020a). In fact, Cerignola itself was *never* an airfield, but the headquarters of the USAAF 304th Bomb Wing, the Bomb Groups of which operated out of three airfields to the west of the town: Giulia, Cerignola #1; San Giovanni, Cerignola #2; and Torretta, Cerignola #3 (USAAF 1943–45: 126, 130, 182, 185). There are of course no traces visible in the aerial photography. Where the idea of a Regia Aeronautica airfield comes from is unknown; the US airfield probably originates in Maurer's *Combat Squadrons of the Air Force* (1982), whose list of USAAF stations in Italy unhelpfully conflates Cerignola #1 and Cerignola #2 under the single name of Cerignola.

Figure 40.

Celone airfield on the 29th of April 1945. *Photo: Bradford Archive*.

Giulia, Cerignola #1

Cerignola #1, later known as Giulia, was located at Torre Giulia, *c.* 5.5 kms northwest of Cerignola, next to the main Foggia–Cerignola road (the SS16). Scheduled for completion by the middle of November 1943 (USAAF 1943c), it was not in fact ready till the following year, when the USAAF 459th Bomb Group was transferred there (Maurer 1982: 738–41). There are no Bradford Archive photographs of Giulia.

The completed airfield comprised a single, PSP-surfaced runway, surrounded by a single angular taxiway, also surface with PSP, off which projected hard-standings of the simple and extended type (airfield type 3b). The runway, which was unusually long (>2 km), appears to have been lengthened at some time. Owing to the low resolution of the single photograph of it currently available, little is discernable of Giulia's associated infrastructure, but it is known to have been surrounded by at least five tent camps, four of which were associated with named USAAF squadrons (Figure 41).

Figure 41.

Giulia airfield. *Photo: RonaldV.*

Lesina

Lesina airfield was located at the west end of Lago di Lesina, *c.* 20 km north-northwest of San Severo. It was operational from March 1944 (Maurer 1982). It comprised a single PSP-surfaced runway, on one side of which was a broad grassy strip, with inner and outer angular taxiways to one side, off which

projected 50-odd hard-standings, mostly of the extended type (airfield type 2) (Figure 42). The runway was orientated SSW–NNE, across the lake.

Owing to the low resolution of the available photographs, little can be discerned of Lesina's associated infrastructure, though we know from photographs taken of it on the ground that these included pre-fabricated wooden huts and a wooden control tower.

Figure 42.

Lesina airfield in early summer 1945. *Photos: RCAHMS.*

Figure 43.

The US airfield of Lucera on the 21st of May 1945. Note the hangar to the west, the simple and extended hard-standings (see also Figure 44), the taxiing aircraft and the clear runway quarry to the north. There was tented accommodated in the olive grove visible at the bottom of the picture. *Photos: Bradford Archive*.

Lucera, Foggia #12

The US airfield of Lucera was located just east of the site of the former axis airfield of Lucera-Nocelli (Foggia satellite #12), *c.* 6.5 kms from Lucera, and beside the main Foggia-Lucera road (the SS17). It opened briefly in February 1944 but proved unfit for purpose and was only finally operational the following April (Hess 2003: 29).

The finished airfield comprised a single, PSP-surfaced runway, flanked on both sides by broad grassy strips, and surrounded by a single angular taxiway, off which projected hard-standings of the simple and extended type (airfield type 3b) (Figures 43–44). At the airfield's southeast end, the taxiway is unusually close to the runway, though still at a distance greater than the minimum allowed (*c.* 150 m) (War Department 1942: 82), apparently respecting a pre-existing olive grove or orchard. Built infrastructure included a hangar at the airfield's west end, and several *small* Nissen and other huts. On the far side of the Foggia-Lucera road, in an olive grove, there was a substantial tent city.

Figure 44.

B-17s parked on simple and extended hard-standings at Lucera airfield on the 2nd of June 1945. Again note the PSP surfaces. *Photos: Bradford Archive.*

Bradford Archive photographs show Lucera airfield on the 29th of April, the 21st of May and on the 2nd of June 1945. In these, the visible aircraft (47 in the May photographs, which show the most of the airfield) are exclusively B-17s (Figure 44).

Pantanella

Pantanella was located *c*. 14 kms south of Cerignola, on the far side of the Fiume Ofanto, and therefore outside Foggia Province. It is included here because of its conventional (if inappropriate) grouping with the Foggia airfield complex and because there is a Bradford Archive photograph showing it (the most southerly photograph in the collection).

Operational from February 1944 (Maurer 1982), when completed, it was one of the bigger airfields in the region, comprising two PSP-surfaced runways and a partially PSP-surfaced inner and outer network of angular taxiways, off which projected 140-odd hard-standings of the simple type (airfield type 5b) (Figures 45–46).

Figure 45.

An early photograph of Pantanella airfield. The second runway is unfinished and there is no trace of the hangar visible in Figure 46. The river in the background is the Fiume Ofanto. *Photo: eBay.*

The Bradford Archive photograph of it, taken on the 29th of April 1945, covers part of the airfield only (Figure 46). It shows, to south, a large tent city, divisible into five distinct units, one surrounding two large Nissen huts and three, the buildings of Masseria Coppe di Maltempo, as well as large numbers of huts unrelated to the farm, both within the tent city and dotted around the airfield taxiways, and, to the northwest of the airfield, what looks like an *unfinished* hangar (Figure 46: upper middle). Also visible are *c*. 25 unidentifiable aircraft.

Figure 46 (opposite).

Pantanella in late April 1945. The hangar is next to the olive grove. *Photo: Bradford Archive.*


0
400m

Foggia #3, Sàlsola

The US airfield of Sàlsola, sometimes called Schifara after a nearby *masseria* of that name, was located more or less on the site of the former axis airfield of Palmori. The only known photographs of it from the air are those in the Bradford Archive, and these show it on the 23rd of May 1945, *after* it had been decommissioned (Figure 47), and it is now difficult to reconstruct. It appears, however, to have had a single PSP-surfaced runway (dismantled and stacked along the runway in the Bradford Archive photograph), with a broad grassy strip on one side, and a linear and several angular taxiways, off which projected looped and simple hard-standings, on the other (airfield type 2). The airfield was not serviceable during wintertime, due to flooding (Lind 1946: 126; O'Connell 1987: 51; USAAF 1943c: 673).

Figure 47.

Sàlsola on the 23rd of May 1945. The last operational units left Sàlsola in March 1945; by May it had been completely dismantled. Note the taxi-through or looped hards-standiongs. *Photo: Bradford Archive.*

San Giovanni, Cerignola #2

San Giovanni airfield was located *c*. 7.5 km southwest of Cerignola. Prepared in late 1943, it received its first combat units in January 1944 (Maurer 1982), when it is described as muddy, with a partially PSP-surfaced runway only, and without hard-standings (Lanford 2011).

Photographs of the finished airfield (Figure 48) show it to have consisted of two parallel PSP-surfaced runways, separated and flanked by grassy strips,

Figure 48.

San Giovanni airfield on the 29th of April 1945. *Photo: Bradford Archive*.

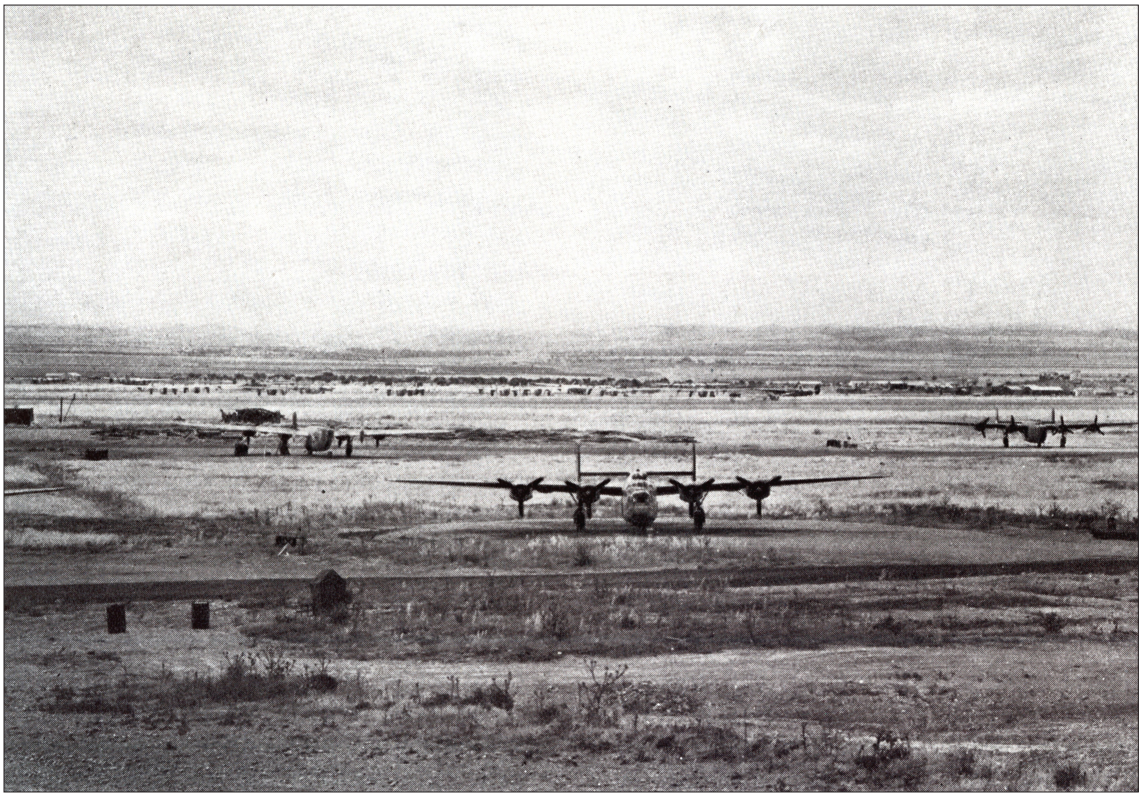


Figure 49.

B-24 Liberators at San Giovanni. *Photo: Barker 1946: 31.*

Figure 50.

The airfield in 2010. *Photo: MST.*

and surrounded by an inner and outer network of angular taxiways, off which projected hard-standings of the simple and elongated types (airfield type 5b). Soil marks of the site additionally show what look like runway foundations between and to the west of the photographed PSP-surfaced runways, suggesting that these had been shifted, again perhaps to facilitate repair without interrupting combat operations (cf. Améndola, p. 39).

Infrastructure included a control tower between the two runways (Smith nd.), Nissen huts (Figures 11 & 51), buildings of *crosta* blocks, and prefabricated wooden huts, the building and re-building of which continued into 1945 (Barker 1946: 31–33).

Figure 51.

Nissen Huts. San Giovanni in Fonte in 1945 and 2010. *Photos: Bradford Archive & Google Earth.*

Bradford Archive photographs of the airfield on the 29th of April 1945 show a group of three tent cities to the west of the runway, clustered around San Giovanni in Fonte (home to the men of the 455 Bomb Group), and five to the east, north and south of Posta Incorvera (home to the men of the 454th). At least 47 unidentifiable bombers, including one on the runway and one taxiing on the westernmost grassy strip, along with a number of other large and small aircraft are visible.

San Severo

San Severo airfield was located at Torre dei Giunchi, *c.* 3.5 kms northeast of San Severo, the end of the main runway just 200 m short of the modern

Figure 52.

San Severo airfield in early summer 1945. *Photos: RCAHMS.*

Figure 53.

Spitfires belonging to 60 Squadron, SAAF. The Gargano massif behind is particularly clear, with Rignano to the right (above Spitfire C) and Valle de Stignano to the left, a view characteristic of San Severo-Torre dei Giunchi airfield. The British and US reconnaissance squadrons that took the 1945 Bradford Archive photographs of allied airfields reproduced here operated out of this airfield. *Photo: unknown.*

Autostrada Adriatica. There are no Bradford Archive photographs showing the US airfield.

As at Foggia Main, the final airfield at San Severo comprised two runways, one short, with what looks like a grass surface, orientated SSW–NNE, more or less on the line of the postulated Italian runway (Figure 31), and a longer one, surfaced with PSP, orientated NW–SE, crossing the former towards its southern end, around which was an angular taxiway, to which an additional loop had been added on one side only (airfield type 4b). Hard-standings were of the simple type (Figure 52).

It is uncertain whether both runways were operational at the same time, or—as seems more likely—the one with a PSP-surface, which overlies the grass runway, superseded the grass runway. If the latter is the case, it would appear that San Severo started its life as a standard fighter airfield, with a single or double loop of taxiways on one side only (airfield type 1 or 2), and was later modified to take larger aircraft, such as the B-24/F-7A, which operated out of it (e.g. Anon 1944).

Infrastructure associated with the airfield, visible in photographs taken on the ground, include a probable hangar, Nissen huts (insulated), wooden and—possibly—stone huts.

Sterparone

Sterparone airfield was located *c*. 10.5 km southwest of San Severo, just northwest of the now ruinous *masserie* Sterparone and il Sequestro. Sterparone, which was operational from April 1944, has been characterized as the last US airfield to be established on the Plain (Saunders & Saunders 2012: 54).

The airfield comprised a single, PSP-surfaced runway, flanked, on one side only, by a broad grassy strip (Figure 54), and surrounded by a single angular taxiway, off which projected hard-standings of the simple type (airfield type 3b). A first-hand report, which refers to two runways at the airfield, says that the PSP-surfaced runway was used for take-off and a "dirt" runway (presumably the grassy strip) for landing (Saunders & Saunders 2012: 50), a possibility consistent with the heavily scarred appearance of the later in period photographs. The same report describes both the taxiways and hard-standings as PSP-surfaced (*ibid*.), a view *contradicted* for the former by the extant photographic record (e.g. Hess 2003: 65).

Figure 54.

B-17s readying for take off at the northwest end of Sterparone airfield. *Photo: Alpha Fowler Jr*.

US-built infrastructure included a hangar, and Nissen and wooden huts, and there was tented accommodation at Masseria Visciglieto, *c*. 3.4 km away to the east-southeast (Figure 8).

A single Bradford Archive photograph shows the northwest end of the airfield on the 9th of July 1945 (Figure 55). By this time, barely two months after the last combat units had left it, the PSP had been lifted, and can be seen

in ones and twos on the white foundation of the runway, and in lines on, and stacked next to, the hard-standings.

Figure 55.

The northwest end of the airfield on the 9th of July 1945, during decomissioning. *Photo: Bradford Archive.*

Stornara

Stornara airfield was located 1.5 km west of Stornara. It opened in late January 1944.

The finished airfield consisted of a single PSP-surfaced runway, flanked on both sides by broad, much scarred grassy strips, and surrounded by an angular taxiway, to which additional loops had been added on one side only, and off which projected simple hard-standings (airfield type 4a) (Figure 56). Both ends of the inner taxiway appear also to have been PSP-surfaced. There was a hangar at the east end of the runway (apparently a late addition to the airfield's infrastructure) (Figure 67: top left) and, near this, two clusters of buildings, including Nissen huts, and other buildings of unknown construction, which appear to be related to the airfield. Further buildings were sparsely scattered around the airfield. Tented accommodation, not clear in the available photographs, but indicated by five different scarred areas visible in the Bradford Archive photographs, was located in olive groves both to the north and south, the scarred areas corresponding to the five different USAAF squadrons based there.

Bradford Archive photographs show it on the 29th of April 1945. These are not of high resolution, but it is possible in them to see 29 aircraft, where identifiable to type, all B-24 Liberators.

Figure 56.

Stornara airfield on the 29th of April 1945. *Photo: Bradford Archive*.

Torretta, Cerignola #3

Torretta airfield (Figures 57–59), or Torretto, as it is incorrectly called in some sources (e.g. USAAF 1943–45: 131, 244; Maurer 1982), lay 13.5 km southwest of Cerignola, between Borgo Liberto and the hamlet of Pozzo Terraneo.

Figure 57.

Torretta airfield in 1944. *Photo: RonaldV.*

Between December 1943, when US combat units were first stationed there (Maurer 1982) (RAF units were there from the previous December), and May 1945, when the Bradford Archive photographs of it were taken (Figure 58), Torretta grew from a single "gravel" runway with a pronounced camber, and “soft hard-standings” (García Sánchez 2018: 128), to one of the bigger airfields in the region, with two PSP-surfaced runways, surrounded by an inner and outwork network of angular taxiways, also part PSP-surfaced, off which projected more than 140 simple hard-standings (airfield type 5b). As with most other of the airfields in the region, however, its transformation took time. A photograph attributed to late 1944, for example, shows two runways, neither of which appear to be PSP-surfaced, and with mostly elongated, rather than simple hard-standings (Figure 57), the overgrown relics of which can be seen in our photographs (Figure 58), while another undated photograph shows two runways, one only of which (the westernmost) is fully PSP-surfaced.

Figure 58.

The northwest end of Torretta airfield on the 25th of May 1945. Note the black (PSP-surfaced) runways and taxiways, and the replacement of elongated by simple hard-standings (cf. Figure 57), the two aircraft dumps (bottom left and upper right—next to the lake) and the unfinished hangar (also bottom left). *Photo: Bradford Archive.*

Infrastructure visible in the Bradford Archive photographs includes, to the northwest, the frame of an unfinished hangar close to which are a large Nissen hut and a number of associated buildings (Figure 59). Numerous other buildings are scattered about the airfield, which we know from photographs taken on the ground to include single story stone-built structures and prefabricated wooden huts. Also visible are abundant aircraft, mostly B-24 Liberators (35 operational and others in two "aircraft graveyards"), but also two B-17s, and close to the hangar three single engine and one small twin engine aircraft.

Figure 59.

The 25th of May 1945. The "unfinshed" hangar (already present in the 1944 photograph) and a modified hard-standing (unmodified in the 1944 photograph) (cf. Figure 57: upper right). Aircraft visible include B-17s and B-24 Liberators. *Photo: Bradford Archive.*

Tortorella, Foggia #2

The US airfield of Tortorella was located immediately to the south of, and at an angle to, the mapped runway of the former axis airfield of Tortorella.

After Foggia Main and Améndola, Tortorella was first on the list of airfields for reconstruction, with completion scheduled for early November 1943 (USAAF 1943c: 673), but as with the other US airfields on the Plain, this date was grossly over optimistic, the PSP, runway, which was originally laid directly on the existing turf surface, having to be raised *13* times and the surface smoothed out before it was finally fit for purpose (Fagg 1983: 261).

British units were stationed there from September 1943 and US units from December, long before it was strictly ready.

The finished airfield (photographed in February 1945) (Figure 60) consisted of a single PSP-surfaced runway, flanked on one side by a wide grassy strip and on the other by a wide dirt strip, both heavily scarred in the photograph, and surrounded by an inner and outer network of angular taxiways, off which projected mostly simple hard-standings (airfield type 5a). Traces visible on the ground, however, and an undated, but—presumably—earlier map, show that here too some of the airfield's hard-standings were originally of the extended type and also that the taxiways to the northeast were modified and extended.

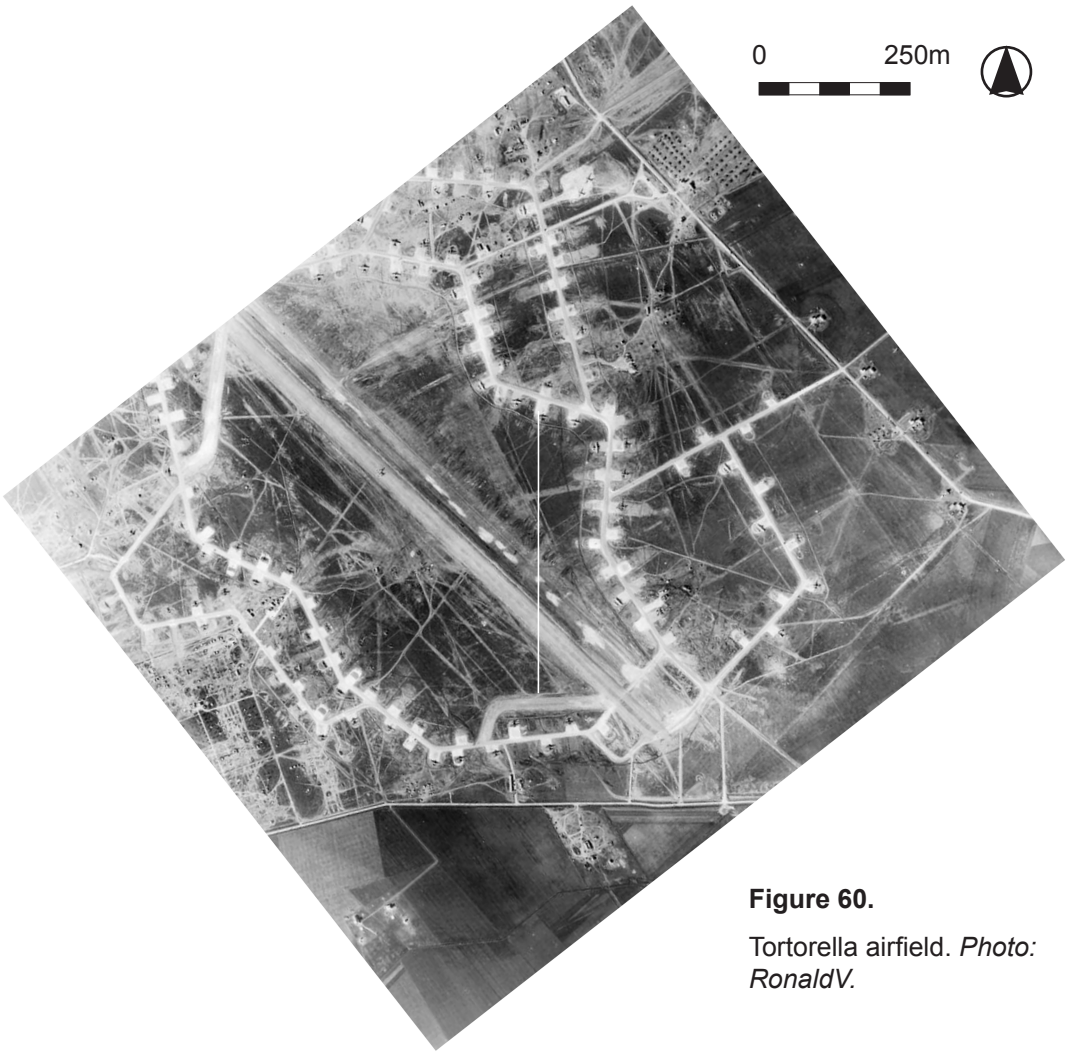


Figure 60.

Tortorella airfield. *Photo: RonaldV.*

Available APs of the site (which do not include any Bradford Archive photographs) are of insufficiently high resolution certainly to identify any built infrastructure associated with the airfield but we know from photographs taken on the ground that these included a wooden control tower (Figure 61) and the usual Nissen, and prefabricated wooden huts. Tent cities were located both to the west and the northeast.

Figure 61.

Tortorella airfield. The wooden control tower, known as the “Sandfly Tower”. *Photo: RonaldV.*

Triolo, Foggia #7

The US airfield of Triolo was laid out on the site of the former axis airfield of Triolo-Zannotti, with the original runway parallel to, and just to the west of the mapped axis runway. Its reconstruction was scheduled for completion on the 17th of November 1943 (USAAF 1943c: 673), but though US units operated out of it from December 1943 (Maurer 1983: 176, 210, 213), it was most likely not finished till well into the following year.

There is an oblique photograph of it, most likely from1944 (Figure 62), and a partial Bradford Archive photograph of it from April 1945 (Figure 63).

In both it consists of a single runway surrounded by an angular taxiway with a single additional loop to the northwest. In the earlier, it is not clear whether the runway is PSP-surfaced or not. Most likely it is not. In the later, the runway has shifted to the northwest (closer to the axis runway), is wider and definitely PSP-surfaced. In both, the main taxiway is narrow and provided with simple hard-standings; and the additional loop, wide, and provided with simple and extended hard-standings. Most likely, therefore, the loop is secondary, and Triolo was originally reconstructed as a type 3a airfield and only later modified into a type 4a, i.e. it underwent two major modifications during the period it was used by the allies.

Infrastructure visible includes tented accommodation at Masseria Torretta (nothing to do with the airfield of the same name), across the Foggia–San

Figure 62.

The US airfield of Triolo in an undated but probably 1944 photograph, looking south towards the Torrente Triolo. Masseria Torretta is to the top right of the picture. Note the relict bomb craters to the left. *Photo: NARA.*

Figure 63.

Triolo on the 29th of April 1945. *Photo: Bradford Archive.*

Severo railway from the airfield, where several Nissen huts can be seen. There were also Nissen huts at Masseria Zannotti, which was bisected by the airfield's eastern taxiway, and what looks like a small camp at nearby Masseria Sborro.

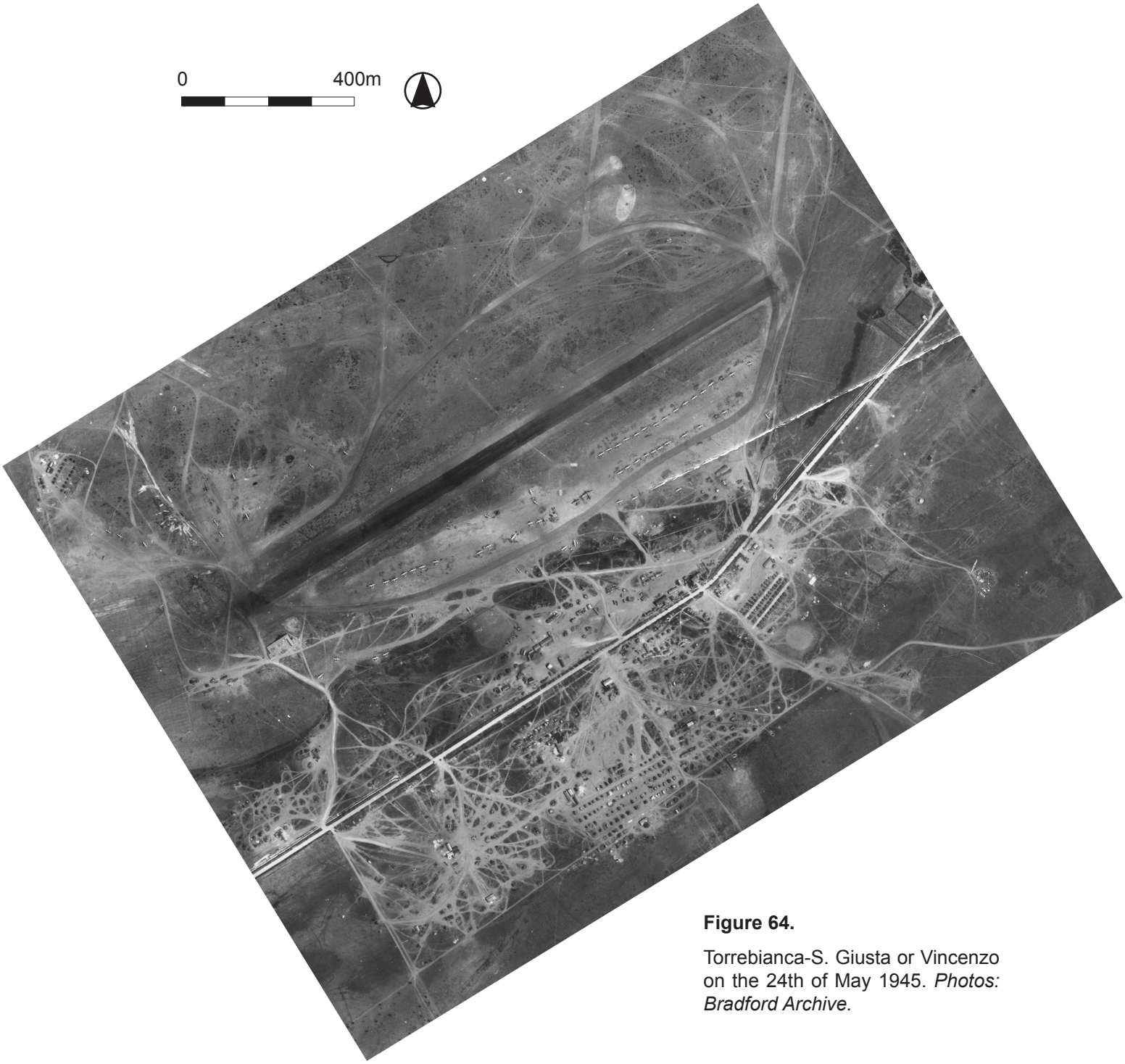


Figure 64.

Torrebianca-S. Giusta or Vincenzo on the 24th of May 1945. *Photos: Bradford Archive.*

(?)Vincenzo

A single allied airfield remains unattributed—Torrebianca or Santa Giusta, *c.* 8.5 km southwest of Foggia (Figure 64). Bradford Archive photographs show it on the 30th of April and the 24th of May 1945. Located beside the Foggia–

Troia road, it comprised a single runway surrounded by a single taxiway without formal hard-standings. In the earlier photographs, the runway appears to have been part PSP-surfaced; in the later, wholly PSP-surfaced. The absence of a visible soil mark on *Google Earth* suggest that the runway was laid directly on the ground, not a gravel foundation. Aircraft visible in both sets of photographs include unpainted P-38s (more than 60 in the May photographs), a B-17, which does not move, and a smaller, unidentified twin-tailed bomber. Also visible are a large tent city (divided into four distinct sections), Nissen huts and many, probable wooden huts.

Torrebianca-S. Giusta is not mentioned in British or US sources under either of these names.

Typologically, it differs somewhat from other airfields built by US Army Aviation engineers in the region, and it is tempting therefore to attribute it to the British. But it is in the wrong place and, anyway, the two known British airfields in the region, Mileni and Regina, are accounted for. This leaves only the missing US airfield of Vincenzo.

Vincenzo is thought to lie to the southeast of the Foggia complex, between Cerignola and Barletta (USAAF 1945; RonaldV 2020), but there are no traces of an airfield in this vicinity, nor is any such place name shown on IGM maps of the area, and, since the map from which this location comes wrongly located other airfields (Giulia and Lesina) (USAAF 1945), it seems possible that it wrongly located Vincenzo as well. Other circumstantial evidence for such an identification, comes from the hearings of US House of Representatives Appropriations Committee, which put the cost of Vincenzo at a fraction of that of other airfields in the vicinity (Williams 1947: 1632), explaining its different, simpler morphology; the unpainted (and therefore probably US) P-38s seen in the Bradford Archive photographs, with which the USAAF 1st Fighter Group, which was formerly stationed at Vincenzo, was equipped; and the existence of a S. Vincenzo and a Monte S. Vincenzo *c*. 5.5 kms to the southwest of the airfield.

Airfield Construction and Dismantling

Quarrying

Runway construction at US airfields was an ongoing process. At some and at first, it involved placing PSP directly onto the pre-existing land surface (e.g. Tortorella) (Fagg 1983: 261). Most however eventually had a foundation of partially calcreted gravel (see above) (Figures 6–7), cut into or lain on top of the original surface. Taxiways and hard standings were constructed in the same way.

In black and white APs, the quarries from which gravels were obtained show up as bold, amorphous white scars, often with indications of linear scraping from the machinery used to excavate them, linked to the airfield by an equally bold, white umbilical track (Figure 65). Bradford Archive photographs

Figure 65.

Quarry to the north of Lucera airfield on the 2nd of June 1945. The quarry partially truncated the Neolithic enclosure of Masseria Rizza, the outer ditch of which shows up clearly against the white base of the quarry cut. The track to the northwest led to Sàlsola airfield. *Photos: Bradford Archive.*

show these at five and—possibly—as many as eight airfields: Amendola, Lucera, San Giovanni, Stornara and Torretta, at which their identification is certain, and Castelluccio, Celone and Pantanella (just off the Plain) at which their identification is provisional only. All are within two kilometres of the related airfield but either far from, or off the line of the runway (Figures 36, 38, 43:, 48, 56 & 58; Table 3).

That these scars were indeed quarries is demonstrated by three things. Firstly, the survival, or later mapping, of a quarry (or unnatural cut); secondly, evidence in the APs that the visible scar is a cut and not a deposit; and thirdly, by the absence of a scar in earlier photographs. The most complete evidence comes from Lucera and Stornara.

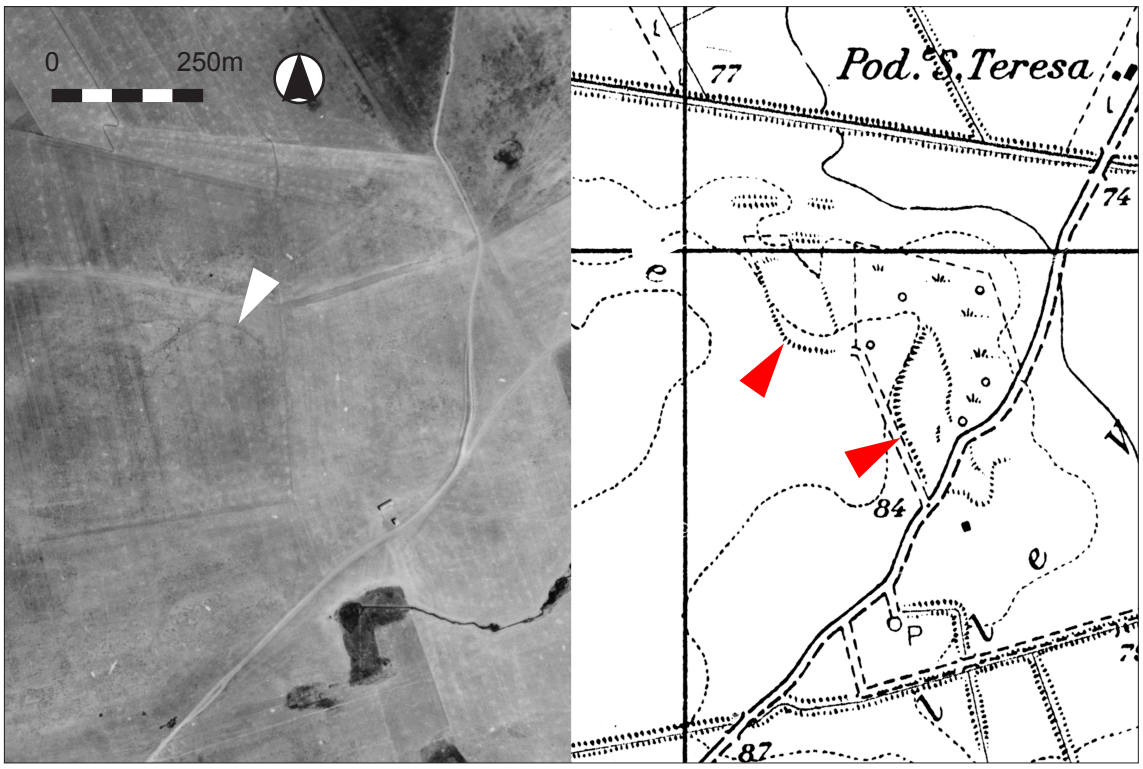


Figure 66.

Masseria Rizza quarry. The Neolithic enclosure of Masseria Rizza on the 20th of August 1943 (arrowed white). At this date the quarries did not exist. In the 1950s IGM map (right), both quarries show up as sharply defined terraces (arrowed red). *Photo: Bradford Archive.*

At Lucera there were three quarries, one in an area called Ciuccariello, 2 km to the southwest, next to the main Foggia–Lucera Road, and the other two, a kilometre to the north, where one cut the Neolithic enclosure of Masseria Rizza (Figure 65). Both of these show on 1950s 1:25,000 IGM map of the area, the first as an irregular hollow and the other two as lobed terraces on the end of a spur (Figure 66: right), and neither show in Bradford Archive photographs taken prior to the allied occupation of the region (Figure 66: left). In addition, on Bradford Archive photographs showing the white scar of the latter, and on Google Earth, on which the quarry shows as a white

soil mark, the dark line of the Neolithic enclosure's perimeter ditch is visible across it (Figure 65: top left), showing unambiguously that the white scar is a cut and not a superficial deposit of white material.

At Stornara three quarries are identifiable. One was located *c.* 800 m away from the east end of the runway, next to a Masseria del Capitano, and survives today as an up to 4 m deep level cut (Figures 67–68) in the side of a fossil river terrace. It is now an olive grove. The others were at the other end

Figure 67.

Masseria del Capitano quarry (bottom left), immediately southeast of Stornara airfield, on the 29th of April 1945. *Photo: Bradford Archive.*

of the runway: one, 300 m west of the end of the runway, and the other, a kilometre away, at the junction of the Tratturello Regio Ponte di Bovina and the SP81. The nearer of these shows faintly on Google Earth as a soil and cropmark and all three show on the 1950s 1:25,000 IGM map of the area.

Figure 68.

Stornara's Masseria del Capitano quarry in 2005. *Crosta* cemented river gravels. *Photo: MST.*

Quarries at San Giovanni and Torretta also show clearly in the APs, on the 1950s 1:25,000 IGM maps of the area, and on Google Earth. At San Giovanni, there were three: two off to the east of the runways, one 900 m and one 1.3 kms away (Figure 48: upper middle right); and the other, 600 m from its north end (Figure 48: top left). One of the eastern quarries survives as a shallow cut, the other as a soil mark and unvegetated wasteland. At Torretta, there were five: one to the northwest (Figure 58: bottom left), one to the north (Figure 69), one to the south (Figure 70) and and two to southeast (Figure 57: bottom right), located between 300 and 900 m away from the runways, and, except for the most distant, off line of them. Three of these quarries also survive on the ground as visible cuts and all are visible on the 1950s IGM map of the region.

For evidence of the quarry at Améndola, we have to rely on the Bradford Archive photographs alone, which show a clear white scar very similar to those described above just under a kilometre northeast of the runway, close to its southeast end (Figure 36: bottom right).

The possible quarries at Castelluccio (two) consist of white scars without bold umbilicals (Figure 38: left), those at Celone and Pantanella, bold white scars with umbilicals, which at Celone, by the time the photographs of the airfield were taken, were slightly overgrown. The uncertainties surrounding their identification, are due to the relatively low resolutions of the photographs in which they appear, rather than any distinguishable

Figure 69.

Torretta's northern quarry was depicted on the 1950s IGM map of the region and shows up as a pale soil mark today (under the olive grove). Note also the soil mark of the taxiway and hard-standings. *Photos: Bradford Archive & Google Earth* (2020).

Figure 70.

Torretta's southern quarry is more or less unchanged. *Photos: RCAHMS & Google Earth* (2020).

differences between them and the identified quarries at the other airfields, and because nothing of them shows on the 1950s 1:25,000 IGM maps of these areas.

That visible at Celone was located 2 kms northeast of the airfield; that at Pantanella, 1.6 kms to the north, next to a Masseria Spagnoletti.

Other possibles include Cava Petrilli, 2.3 kms south of Sterparone (Seager Thomas 2020b), and the only known quarry in this vicinity, which we know from a Bradford Archive photograph of 1943 and the 1950s 1:25,000 IGM map of the area, was first quarried some time between these dates, but which—unfortunately—falls just outside the later WW2 aerial coverage of the area; and white scars visible in low resolution APs of Giulia (Figure 41: far right) and Lesina (the latter labelled "gravel pit" [*cava di ghiaia*] on the 1950s IGM map of the region) (Figure 42: middle left). Quarries or possible quarries, however, are not currently known in the immediate vicinities of Foggia Main, San Severo or Triolo, of all of which we have good AP coverage, and we have to assume therefore that the sources of their foundation material were located at some distance from them.

Dismantling

Of the twenty six airfields operational on the Plain between 1943 and 1945, only two—Gino Lisa and Améndola, which were "donated" intact by the US to the Italian Air Ministry—now remain. What happened to the rest?

Those axis airfields, which were not adopted by the Americans, returned directly to agriculture. Never much more than selected fields anyway, one season of the Italian deep plough and they were gone. Except where impinged upon by US reconstruction, however, their boundaries, which for the most part consisted of pre-existing field boundaries remain discernable on the ground. Morin (Figures 22–24) and Posta Uccello, for example, are more or less unchanged. (The Canalle Carapellotto, which demarcated Morin to the south, has been diverted at the airfield's northeast end, but otherwise the Bradford Archive photographs of it can be overlaid directly on modern maps of the area). At San Severo-S. Andrea, the land use of the southwest end of the mapped runway is changed, but it is easy enough to match up the contemporary with the former groundscape. Even at Tortorella, later a significant US airfield, we can still easily pinpoint the mapped site of the original German airfield between Masseria Tortorella and Tortorella railway station.

Much the same can be assumed of Mileni and Regina, though, not knowing their precise locations, this is not something we can confirm on the ground.

As for the other US airfields, these were characterized by the US government as "abandonments". Their nature was such that donation, as occurred with Améndola and Foggia Main, was considered non-applicable.

All salvageable material was removed from them, and the residue written off as unsuitable for commercial, or Italian military use (Williams 1948: 1632).

The Bradford Archive photographs show that salvage began early and proceeded quickly. Even before the end of the war in Europe, PSP was being lifted at Celone. By the end of May 1945, Sàlsola, which the last combat units left in March, had been completely dismantled and one of Améndola's three runways lifted. By July, Sterparone, from which the last combat units departed in May, appears also to have been dismantled. At all three, stacks of PSP were still present (e.g. Figure 55).

Photographs, taken by or for the IGM for mapping purposes in late 1945 show Lesina, Sterparone and Triolo, but not San Severo, completely stripped. Futher photographs from 1953–1954 (the latter belonging to the IGM Volo Base) (Ceraudo & Shepherd 2010: 237; ICCD 2019) show Castelluccio, Celone, Giulia, Lesina, San Giovanni, Sterparone, Stornara and Torretta stripped, but their white foundations still sharply defined against the surrounding soil and vegetation. Since most of the features of the airfields visible in the APs are absent from the maps based on them we can assume them, by this time, to have returned to the fields from which they were cut.

Today, given the right conditions, the outlines of most of the Plain's US airfields can be spotted on on Google Earth, but all are beginning to blur, and two or three are barely or not visible at all (Giulia is largely obscured by vineyards; Sàlsola appears not to have been photographed under the right conditions; while Torrebianca-S. Giusta may never have had a much of a foundation in the first place).

A waste of research time?

Using the Bradford Archive APs in association with original USAAF documentation, the 1950s IGM mapping of the region, the aerial coverage provided by Google Earth, and other allied, and later Italian APs, we have now accurately located and characterized most of the airfields that were operational on the Tavoliere Plain during WW2. The axis airfields and—probably—the British airfields, were mostly *ad hoc* adoptions, which left little trace behind them; the US airfields, built at considerable expense to a pre-existing template, developed over time and left behind them enduring, but not immutable traces.

There are numerous online references to the Foggia airfield complex during WW2—many more, for example, than to the periods for, and the projects by which the Bradford Archive photographs have been studied hitherto, including that with which I was associated, the Tavoliere-Gargano Prehistory Project. We might as well get our facts about them straight, therefore, and this is what I have attempted to do here. But the minutiae of these airfields also form part of the wider context of WW2, without which this can never fully be understood—the Intelligence Officer bent over an AP characterizing an

airfield site; the combat engineer unpacking a lorry load of imported PSP; the farmer unable to plough because a B-17 was parked in his field; the pilot on his 21st birthday hosing his crew's blood and brains into the dust of an Italian runway; the plough shear blunted in the now stony soil of the former airfield.

The present work also highlights the wider research potential of the Bradford Archive of APs, emphasising, on the one hand the need to publish the present archive (which I am doing now, albeit scan by scan); and, on the other, the anti-academic opportunism of those organizations that possess similar photographs (such as those held by the RCAHMS), claim a completely spurious copyright over them and charge huge amounts of money to access and use them.

Ongoing related work will need to access all these sources. It will also need make full use of the period written record, a source largely inaccessible to me at the time of writing, owing to the 2020 UK coronavirus lockdown. Obvious topics for future Bradford Archive research include those aspects of photo interpretation that I have sketched over here: a comparison of the contemporary and synthetic written records with the photographs, an analysis of the changing disposition of the axis and allied airfields shown over time, etc. As for future research on the Foggia airfield complex, I hope to revisit the topic of their material traces, and in particular airfield quarries, in the field, possibly accompanying this with a study of any contemporary sociology associated with them. We also need finally to pin down the locations of the British airfields, and confirm the period identity of Torrebianca-Santa Giusta.

A note on the period photographs

The copyright of photographic images, where it exists, lies with the photographer or the organization that commissioned the photograph. Copyright does not rest with the owner of a print, negative or digital file of the photograph.

The original WW2 aerial reconnaissance photographs comprising the Bradford Archive, together with the others used here, were produced by the RAF and USAAF, and according to the copyright laws of both Britain and the US, they have long been out of copyright/ in the public domain (e.g. Figures 1, 37, 41, 52 etc.). Other of the period photographs used, insofar as they were taken by military personel on active service, are also acknowledged to be out of copyright/ in the public domain (e.g. Figure 32). Others, though also taken by military personel on active service, are not (e.g. Figures 7, 34 and 53–54); though all have been posted freely on the web by their "owners" and are widely circulated. These, together with the modern aerial photographic images taken from Google Earth (Figures 4, 8, 51 and 69–70), are used under the principals of fair dealing/ use, under which limited use of copyright material for non-commercial academic purposes, which does not impact adversely on its commercial value, is permitted.

Most of the photographs I have used here have been retouched/ enhanced by me, which may or may not affect their copyright status. (Figures 36, 42 and 54, for example, are composites; while most have had been partially dodged or burned and despeckled). Nonetheless I claim no enhanced rights over them. I would *request* however that anyone re-using them acknowledge their source: this paper, or the Bradford Archive, the scanning of which was part funded by the UCL Tavoliere-Gargano Prehistory Project. If anyone is interested in particular originals, let me know, and I will do my best to prioritize their posting online.

I would like to express my gratitute to the following for posting/ making available the originals of the photographs used here: the Australian War Memorial, Canberra (for Figure 32); Kerry Brown, Sue Hamilton and Ruth Whitehouse of the UCL Tavoliere-Gargano Gargano Prehistory Project (for the Bradford Archive photographs); Penny Draper (via Nature Online) (for Figure 34); Michael Moskow (for Figure 62); Andrew Powell (for Figures 9 and 45), RCAHMS (for Figures 42, 52 and 70: left); and RonaldV (for Figures 21, 41; 47 and 60–61) (Ron also kindly provided me with digital copies of USAAF 1943a–c and USAAF 1943–45, originally provided to him by Reid Waltman).

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